

AMERICAN FRUIT GROWER MAGAZINE

Christmas
Greetings
1922



DECEMBER 1922
Ten Cents a Copy

Edited by Samuel Adams

Large Size
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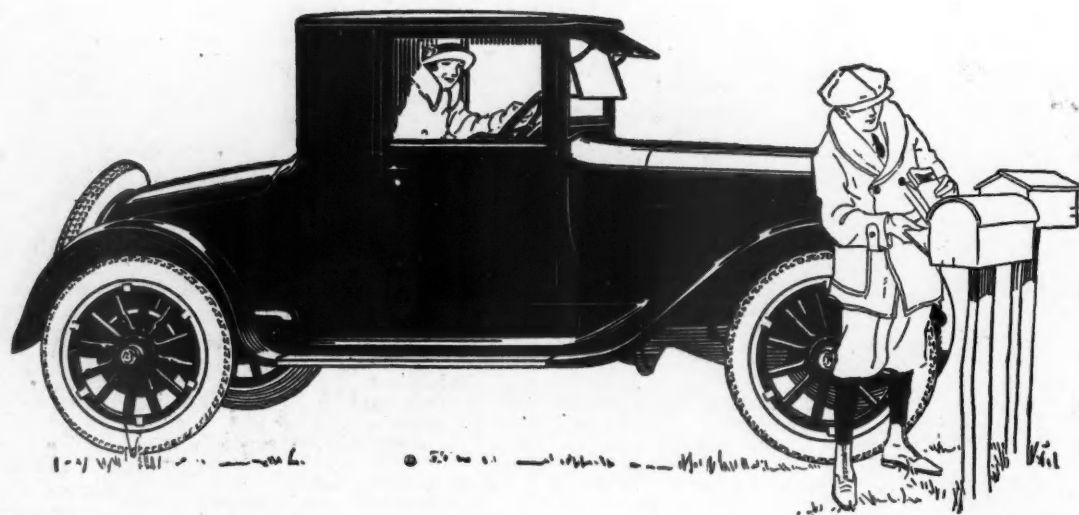
But steel construction does more than contribute to the car's safety and durability; it permits the use of Dodge

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A Strawberry "Crank" Makes Good

By Anna Wade Galligher

FIFTEEN years ago I began to get interested in strawberry growing; but at that time, had no opportunity to engage in any branch of horticulture because we were living on a rented farm, many miles from any large town or city.

Neighbors advised me that strawberries could not be grown in that part of the country at a profit. We are now living in an adjoining county, and although I was given the same kind of advice here, I have been growing strawberries for pleasure and profit for a number of years. But, really, it is an interesting, not to say fascinating, occupation in spite of the hard work.

I have done nothing remarkable. However, in view of the fact that I have to do most of the work myself, I feel well satisfied with the progress made. A great many difficulties have had to be overcome. It is almost impossible to hire help except during picking season and then some of the help is very poor.

There are no large strawberry farms here, and there are never enough strawberries to supply the demand. Yet, I was advised not to try to grow strawberries for market because it was claimed home grown berries could not compete with those that were shipped from other states. It is the other way round. As soon as the home grown berries appear on the market, no one seems to want the shipped-in berries.

No great skill is required to grow strawberries and yet sometimes those who have made quite a success of other things will fail miserably when they attempt to grow strawberries. Then, instead of trying to find out where the mistake was, they decide to leave strawberries alone and not even try to grow enough for home use.

Good Plants Essential

I believe the first step toward successful strawberry growing is the purchase of some good, reliable, true-to-name plants. The first high priced strawberry plants ever seen in this part of the country were purchased by the writer from a well-known strawberry plant grower. At that time I was called a "strawberry crank." That was a number of years ago, about the time when the so-called overbearing varieties were introduced and I have the honor of being the pioneer overbearing strawberry grower of this section.

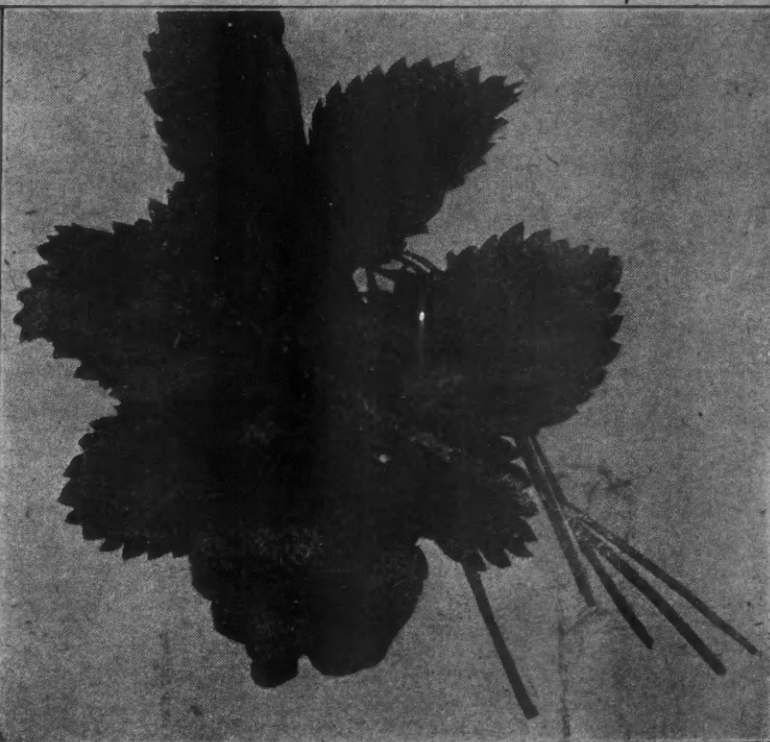
I believe that any person of ordinary intelligence can learn by reading how to start growing strawberries, but, of course, experience is the best teacher. During the past five years I have learned more about strawberry culture by practical experience (sometimes costly) than I learned during the ten years previous by reading. However, I had to be content with reading about what other people were doing for a long time before I could begin. It was interest-

ing reading. I read everything that I could get hold of on strawberry growing, not forgetting nursery catalogues and bulletins, both of which will usually be found to contain information that is valuable to anyone who is interested in horticulture and wants to keep well posted.

I became so enthusiastic that I wanted to plant an acre right in the start. I imagined that it would be almost as good as a gold mine. I still think an acre of strawberries in good bearing condition is a valuable piece

blossoms and buds all frozen stiff and some even curled downward. Some of the buds were killed and most of the open blossoms, but in spite of all this, we picked one of the biggest crops of strawberries that had ever been seen in this section from a small patch.

One prosperous farmer decided to plant a patch several years ago and later ordered one thousand of the cheapest strawberry plants he could find. It resulted in a complete failure. Two years later, he decided to try again. He asked me if I would



More Strawberries should be grown in all sections of America

of property, much more so than an interest in a gold mine—on paper. In fact, there is nothing that I know of in the way of fruit growing that will bring larger returns for the capital invested than strawberries. No other fruit crop is as dependable. Why? Because a strawberry patch can be protected during winter and until all danger of killing is past, while other kinds of fruit have to take whatever comes along. Besides, strawberry fruit buds are hardier and less liable to be injured by frost than those of almost any other kind of fruit. Early in May, 1920, when the strawberry blossoms were just beginning to open, a hard frost came and froze all the plants stiff. I certainly was discouraged when I found leaves

sell him a few hundred good plants. I replied that I would and priced the plants at about half what I had paid for the same kind of plants (overbearing) when they were still something of a novelty in this part of the world.

Did he buy? No indeed! The price was too high, at least, according to his judgment, so he put off the work until fall, bought another thousand low priced plants and set them about the middle of September. These plants made a little growth but not enough to get a firm hold before winter as the weather was dry most of that fall. He covered the patch carefully with straw but, as might be expected, a large per cent of the plants heaved out during the winter. This

patch did not produce enough berries for the home table. It was as big, a failure as the first. This farmer says he is done with strawberries. They require too much time to bear a crop and too much work. Perhaps he planted the "neverbearing" kind.

If every beginner could be induced to patronize some good reliable nurseryman or plant grower instead of trying to get plants for little or nothing, there would undoubtedly be fewer failures. Now, I have no strawberry plants to sell and therefore no "axe to grind."

Fall Setting Unwise

But buying worthless plants is not by any means the only way to start wrong. Some people who ought to know better will not only set out strawberry plants late in the fall but will advise others to do the same thing. Fall set patches are probably all right in the south but all wrong here in Ohio. Even if the plants escape being heaved out of the ground in winter, there can be no young growth to speak of and, therefore, none but the original plants to bear berries the following season.

Fight the Grubs

The worst enemy that attacks strawberries is probably the large grub worm that is nearly always to be found in old sod. For this reason other cultivated crops should always be grown previous to setting in strawberries. When these grubs begin on a patch it is useless to try to do anything more than kill them because it is impossible to find them until after the plants have begun to wilt. Of course, they should be killed wherever they are found, but the "ounce of prevention" is more effective.

It is not uncommon for several of these grubs to attack a plant and during a drought they usually make short work of it. Nothing is more discouraging than a grub-infested strawberry patch. Therefore, I would advise every beginner to be careful about the location of the patch. An old sod or ground that has not been cultivated recently is unfit for a strawberry patch.

I have never had many pests to contend with but it is well for the beginner to be ever on the alert. Leaf-spot and blight should never be permitted to get a "foot-hold." Some varieties are more liable to be affected than others. Whenever I find that a certain variety of strawberry is particularly inclined to have blight or leaf-spot, I lose no time in treating the diseased vines to prevent spreading to others and then stop setting that variety in the future.

Removing Buds

A little neglect at first, that is after the young plants begin to grow, will sometimes cause more injury than any one thing that I can think of. I mean neglect to pick off the buds and blossoms.

(Continued on page 11)

The California Avocado Industry

By J. Eliot Coit

THERE is no longer any doubt about the popularity of that new salad fruit, the avocado, on the American markets. For centuries the people of Mexico and Central America have fully appreciated this peculiar though very nutritious fruit which contains little or no sugar but a large amount of oil and protein. But some of the oldtimers in this country freely prophesied that the avocado sometimes incorrectly called "alligator pear," would not sell on American markets, that it would require many years to educate the American people to a new taste. Such has not been the case for ever since Florida and California growers began to produce avocados in commercial quantities, the demand has kept ahead of the supply and first class fruit has brought the grower from forty cents to one dollar per pound.

Three Races of Avocados

There are three general types or races of avocados known as the Mexican, Guatemalan, and West Indian. The Mexican varieties do well in both Florida and California, but the fruits are small and too thin skinned to ship well. Many of them such as Ganter, Puebla, and Northrop are of fine flavor however and are excellent for home and local consumption. The Mexican is also used exclusively as a rootstock in California, where for all commercial plantings Guatemalan varieties such as Fuerte, Spinks, Dickinson, Lyon, and Dickey A take the lead. West Indian varieties are of little or no value in California on account of the dryness of the atmosphere. In Florida the West Indian varieties such as Trapp and Pollock do best and have been most generally planted although several Guatemalans recently tested in Florida show considerable promise. One of the most important things to bear in mind is the fact that in California the different varieties mature at different seasons and it is now possible by planting Spinks, Dickinson, Sharpless, Puebla, and Fuerte to market fresh fruit in commercial quantities every day in the year. What this means in better distribution and increased consumption can readily be appreciated by any one at all familiar with the banana industry in this country. In general, the Mexican varieties mature in fall and winter and the Guatemalans in spring and summer.



Fuerte Avocado commercial pack

The Best Localities

In Florida the most successful commercial plantings are located south of Palm Beach at Miami and Homestead on the east coast, and south of Tampa Bay at Fort Myers on the west coast. In California the best localities lie in the coastal belt between Santa Barbara and San Diego including a part of Los Angeles and Ventura and all of Orange Counties. The interior valleys are too hot and dry for commercial production, while the Central California coast is too cool in summer. The most successful orchards in Southern California are situated on foothill slopes from five to forty miles from the

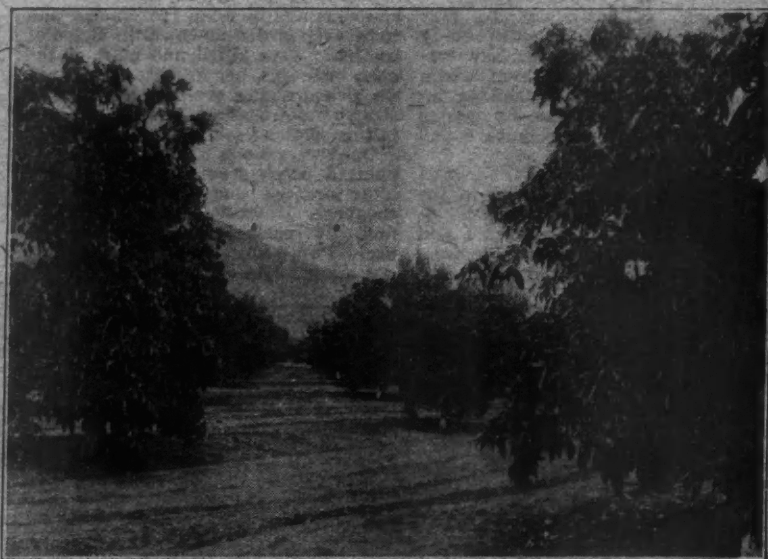
coast as at Pasadena, Glendora, Whittier, Yorba Linda, Orange, and Chula Vista.

The late unpleasantness of last January, or in plain words the freeze in California, did much to restrict plantings to the relatively frost free foothills, for the avocado is of about the same hardiness as the lemon and much loss was sustained by the more venturesome who had planted in frosty places. Taking full consideration of the freeze however, it is still true that there is much land ideally located for avocado culture. A good plan is to buy an old run down orange or lemon grove which has a good water supply. In such a case the true frost hazard may be had from actual records. The grove may be interest to avocados and the old citrus trees removed gradually over a period of several years thus retaining some income from the start. The avocado is not subject to the same pests and diseases

thousand dollars an acre. The ruling price of nursery stock is from three to five dollars per tree according to size and quantity. Avocado nursery trees are delicate and somewhat "cranky critters" and it requires some experience to plant an orchard and get the trees to take hold and grow off well. A good avocado orchard ten years old and coming into full bearing will represent a total investment of between four and five thousand dollars per acre, but three or four good crops should pay this off.

Soils and Fertilizers

Avocados are not particular as to soil type so long as it is deep, fertile, and well drained. There are excellent orchards on a variety of types but the preference is for the rather heavy clay loams and adobes which have sufficiently opened up with manure and bean straw to make them take water well. In California, fertiliza-



Orchard of Spinks Avocado near Duarte, Calif.

as citrus and on that account is ideal as a long time rotation, particularly as the irrigation water requirement is the same as for citrus.

Choice of Varieties

The question of varieties is vital in any new fruit industry. Literally hundreds of varieties have been tested out by the California Avocado Association while the commercial list has been narrowed down to half a dozen standard sorts. It is the writer's belief that the money makers at the present time are Spinks and Dickinson. These grow well and bear well, and in common parlance, they do "bring home the bacon." The Puebla is chiefly valued for its season of ripening at Christmas time and the Fuerte is frost resistant, a wonderful grower and an exceptionally fine fruit with 25% of oil and 2% of protein, but neither of these varieties bears large crops regularly. The Lyon is a fine fruit which has made some wonderful records for yield, but the tree is difficult to grow and requires so much coddling that few growers have been successful with it. Well located orchards of Spinks and Dickinson, twelve to fifteen years old should yield a net income of two to three thousand dollars an acre and do it right along. There are as yet few pests or diseases to worry with although some damage is occasioned by fall winds which shake off the fruit prematurely and occasional frosty nights which may cause some immature fruit to fall.

Old citrus orchards with water, well located for avocado plantings may be had at from two to three

tion is practised almost entirely with humus-forming materials such as leguminous winter cover-crops, manure, lima bean straw or alfalfa hay. Seventy-five to one hundred dollars worth of such materials per acre per year should keep a bearing orchard in vigorous condition. Except during the winter rainy season, the trees should be irrigated at twenty day intervals, wetting the soil uniformly to a depth of four feet. Between irrigations, a thorough cultivation both ways to a depth of four or five inches is sufficient on most soils. One deep plowing, preferably in the fall is needed to prevent the formation of plow-sole and keep the soil in condition to take water readily. Where the cost of water is reasonable the total maintenance cost of an avocado orchard will run between \$150 and \$200 an acre a year.

Trees for Planting

The fact that avocado trees are difficult of propagation is reflected in the high price of nursery stock. The Mexican seeds used for rootstocks cost five cents each. The operation of budding is difficult requiring a high degree of skill. At best, many trees have to be budded over several times. It requires two years of careful attention to details to produce a good tree. When transplanted to the orchard each tree is moved with a sixty pound ball of earth wrapped in burlap. The trees should be lifted in March when dormant and stored for several weeks in partial shade where they are sprinkled daily until growth starts when they are ready for planting in April. The balls must be handled

with the greatest care so as not to loosen the soil from the fibrous roots. After transplanting each tree is provided with a basin six feet in diameter, filled with alfalfa hay as a mulch and watered with a hose or tank wagon twice a week during the first summer. It is a common practise to provide a burlap shelter to protect it from the afternoon sun. In short the avocado demands to be treated like an aristocrat and careless or slovenly methods will result in failure. But if everything is conscientiously attended to the trees will grow well and amply repay the owner for all his trouble. There are a dozen or more nurserymen who have mastered the art of growing avocado trees and there are now produced in Southern California between ten and fifteen thousand trees a year of commercial varieties. New orchards are being planted at the rate of 125 to 150 acres a year.

Why Prospects are Bright

The food value of the avocado surpasses that of any other fruit. Containing a high percentage of oil and protein, it takes the place of meat and is particularly easy of digestion, being well suited to even the most delicate stomach. Once an individual becomes acquainted with avocados and acquires the taste for them, he usually becomes extremely fond of them and is willing to pay almost any price for the fruit. But of all epicurean delights, the apex is certainly reached in avocado ice cream which attains the maximum in flavor, appearance, and food value.

So far, market prices for good fruit have been very high, too high for large consumption. As production increases lower prices will greatly stimulate consumption for it is not every man who can afford to eat avocados regularly and generously at a dollar each. In order to supply the demand, a good deal of foreign fruit is being imported from Central and South America, Cuba and Tahiti. Most of this is gathered from seedling trees and is of very poor quality. Fruit from budded orchards of select varieties from both California and Florida is uniformly good and far superior to the ordinary run of imported fruit.

The areas where avocados may be grown commercially are limited, and overproduction will hardly occur with fair distribution. This is especially true in view of the constant supply



The Spinks Avocado

of fresh fruit every day in the year. Commercial varieties have been selected with an eye to good shipping qualities, and if properly packed the fruit carries across the continent in good condition, can be held in cold storage and released to the market over a period of several weeks. The industry is now passing out of the experimental stage, and growers who take the trouble to inform themselves

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Rambles of a Horticulturist

By C. I. Lewis

WESTERN New York is the largest producer of barrelled apples in the world and probably will continue to hold this honor for many years to come. Scattered through a rich strip of land 10 miles wide and 125 miles long is found some of the finest old orchards on the American continent. Many of these trees are from 50 to 100 years old and occasionally one finds them even older and in good productive condition.

While the largest percentage of the orchards are congested in this narrow strip 10 miles in width and 125 miles in length along the shore of the lake, nevertheless there are good orchards found in the area to the south.

The soil of western New York is fertile and of a character which retains moisture and soil fertility. The climate temperance by the great bodies of water from the lakes is of such a nature as to be very conducive to fruit production. The section still has an abundance of relatively cheap lands and orchards.

Owing to a large population there is a relatively large supply of labor. Good transportation is found throughout the entire district, as the region is blessed by being situated in the center of one of the largest markets in the United States.

Good Place to Live

Western New York is a good place to live. It is a beautiful country, gently rolling. The highways are lined with trees. Most of the farms have small, attractive groves. There is an air of stability about the whole district. The farm homes and buildings in general are well kept up. There are fine, hard surfaced roads throughout the entire district. Every few miles one passes through a prosperous, attractive village and in the distance is the smoke from some big center, near enough to furnish the advantages of a big city but still far enough away to give you ideal living conditions in the country.

The trees of western New York are large. They have tremendous trunks and a spread which is surprising. The trees are so large that some of the orchard operations become very difficult. It would be very hard to thin scientifically some of these huge trees. They are so tall and have such a wide spread that hand thinning would become very expensive. Spraying of these trees is a special problem. To get the best results large outfits of 10 or 12 horsepower would be ideal. These could handle two guns with a disc that would give a mist spray, which would throw it over the entire tree, covering the top as well as the lower surfaces. If a good spreader is added to this spray, there is no reason why a very high percentage of control of insects and diseases cannot be secured.

Spraying and Pruning

Too many growers I fear, however, are using too low a horsepower, are tending to use two guns with such an

outfit, which means a coarse, driving spray which spreads very poorly and is not very efficient in control. Probably the old-fashioned nozzles would be more successful with such outfits than a gun, but the old nozzle will not reach the top of the tree. Only by high power and a mistlike spray can the best results be obtained with trees such as one finds in western New York.

Pruning has to a more or less degree been neglected and a very large percentage of the trees are too bushy, with too much foliage and wood and not enough light to permeate through the trees to develop strong, firm buds. Too large a percentage of the fruit is born on the outside of the tree and much of it is produced on terminals.

Tillage on the whole has been very good, although the problem of main-

tenance of the orchards is still a problem. During the past 10 or 15 years there has been established some large commercial orchards in the district, but the small 8 and 10 acre orchard is the rule.

One sees here both the advantages and disadvantages of diversification, the advantage being that when the apple crop fails the farmer still has other crops to rely upon, such as potatoes, grain, hay, cabbage, beans, etc., and perhaps this is not so bad a combination when one stops to think that a large percentage of the varieties grown in western New York bear only every other year and are not the annual types of bearing which one will find in some other districts. The disadvantages of diversification are very evident in the district in that there is not the same attention given to the production of high quality fruit that one will find where a man devotes his

York. Last year, I was told, 120 varieties were harvested and this year it is estimated that at least 160 varieties will find their way into the market.

It would be wrong, however, for the reader to conclude that the average orchard in New York is simply a jumble of varieties. Fifty percent of the apples produced in western New York are Baldwins and another 20% are Greenings, and of the remaining 30% there is a very good sprinkling of such varieties as King, Roxbury Russett, Duchess, 20 ounce, Wealthy and Hubbardston. Most of these old, standard varieties which are produced in this section are produced to a relatively high degree of quality; that is, as Baldwins go, or Rhode Island Greenings go, New York's quality is good.

The district perhaps has been unfortunate, however, in that they have centered their attention too much on varieties of only fair quality and varieties which tend to produce a crop only once in two years. The annual bearers will bring in more money. One man in the district, who was unusually well posted, told me that over a series of years he made much more money out of Ben Davis than anything else. He hated to say so, but the Ben Davis produced him a crop every year and he found a very good market. They were good keepers and he really made more money from his Ben Davis blocks than he did from his Baldwins and his Rhode Island Greenings.

Probably western New York would be better off if they would graft their trees over to about 15 varieties. The varieties that it would pay to keep, but which might not necessarily pay to put into new planting, would probably be as follows: Duchess, Wealthy, 20 Ounce, King, Rhode Island Greening, Mackintosh, Wagner, Baldwin, Spy and Ben Davis.

Pears and Peaches

A heavy tonnage of pears is produced in western New York; in fact, the Empire state is one of the heaviest producers of pears in the United States. Probably 35% of the plantings are Bartletts and they grow a high quality Bartlett, not only for the general market but for canning. I saw most excellent Bartletts taken out of storage in the middle of October which were being shipped to canneries and they were in fine canning condition. With a higher development of this business so that the canneries could afford to put on a heavy run, Bartlett pear growing ought to be very profitable.

Probably about half the pears grown in western New York, however, are Kieffers. They have been productive, have been relatively free from blight and they have had up to the present time a good market, and the result is that this variety has become a favorite.

(Continued on page 17)



In the shade of old apple trees 70 years old

taining a moisture supply under average conditions in western New York is not difficult. The retentive nature of the soil, coupled with a good generous supply of moisture, spread out well throughout the season, gives this section ordinarily sufficient moisture.

Cover crops grow very nicely and in many of the old orchards which have been in clean tillage all summer a very heavy growth was found in the middle of October; in fact, many of the orchards looked as though they had not been tilled at all during the summer. Strong soil, abundant moisture, with good fall weather encouraged a strong cover crop growth.

Diversified Farming District

Western New York is a typical diversified farming district. Orchard- ing is simply a side line with most farmers. A typical farm perhaps will have 100 to 150 acres of farm land and only 8 or 10 acres are devoted to

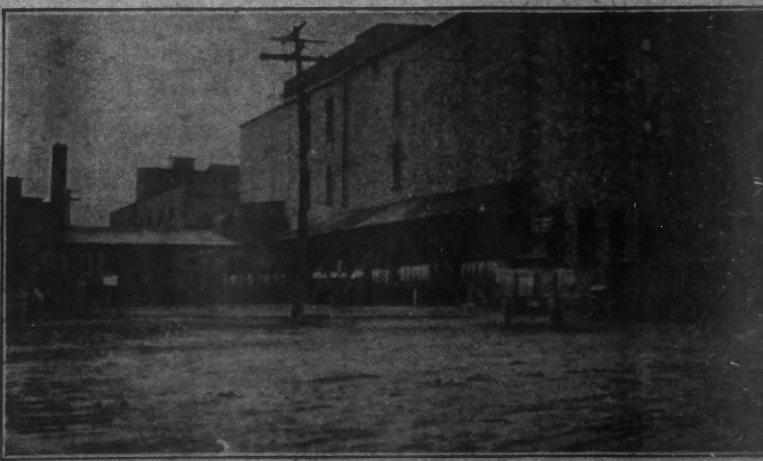
entire energy to fruit production. There is a carelessness about spraying and growing high class fruits, which would put a specialist in a district where he was up against high freight rates entirely out of business. The nearby markets have a tendency also to encourage low quality production because there is a market in normal years for practically everything that is produced. A grower will, therefore, follow the line of least resistance and perhaps does not try hard enough to get a high percentage of A-1 fruit. There is some evidence, however, that this condition is greatly changing in western New York and a larger and larger number of growers are giving more attention to thinning, spraying, careful pruning, and the production of high class fruits.

Too Many Varieties

A large number of varieties of apples are still grown in western New



The modern community packing plant at Medina, New York



This storage joins on to the packing plant—a very desirable feature.

Unique Work in Horticultural Products

Oregon Agricultural College Offers Degree Course and Short Courses in Fruit Utilization

By John C. Burtner

GROCERY stores of the nineteenth century were concerns of bins and boxes. Customers were limited largely in their choice of food to products "in season." The modern grocery, however, is a place of tins and glasses, and the aspiring hostess, desirous of giving a "spring dinner" in November, is limited only by the capacity of her table.

Behind those banks and banks of prepared food products now familiar to every one, are endless acres of farms, but between the farms and the shelves of the corner grocery is an industry gigantic in size and phenomenal in growth. The canning, preserving, and food processing industry began in the farm kitchens but has grown steadily and rapidly until now its annual output is valued at more than 1½ billions of dollars. Founded on scientific principles, it has developed because of consistent advancement in that field. Improved commercial practices have followed close behind new discoveries, but these have, until recently, been dependent on private research.

Few great industries—save perhaps farming itself—grew to such proportions without provision being made for systematic investigation of its problems with a view to working out practices for the entire industry to follow. Not until three years ago was a school established anywhere, the sole purpose of which was to carry on and encourage research in the line of food products and to train men to be leaders in this industry.

Oregon the Pioneer

It fell to Oregon—as has so often been the case—to be the pioneer in this work. The Oregon Agricultural College in 1919 established as a part of its strong horticultural department, a section of horticultural products housed in separate buildings built for the purpose. It became the first institution in America to carry on research work in scientific manner on a scale adapted to commercial practices. After three years the results to both the fruit and canning industries have more than justified the opinions of those instrumental in its founding.

Many sections of the west are becoming vast orchards as their peculiar fitness for large scale, high quality, fruit production is more fully realized. The Pacific northwest is, furthermore, largely the exclusive place of production of certain fruits and vegetables, notably Loganberries and broccoli. Distance to great centers of population for ready markets is so great, however, that it is imperative that many of the products of fields and orchards be sent to market in their finished form or as nearly so as pos-

sible. In response to this marketing need, canneries, driers, and dehydrating plants have sprung up until Oregon alone has 73 such commercial concerns. Some of these are operated by private capital and many by co-operative associations of the growers.

Well Equipped Plant

In the heart of this horticultural district the Oregon Agricultural college is maintaining a \$75,000 plant devoted entirely to the furtherance of this great industry so essential to

Work in horticultural products is carried on in a \$40,000 three-story brick structure designed and built especially for the purpose. Each part of the plant is given over to one particular phase of the work in instruction, experimentation, or scientific research.

The largest of these units is the canning room, 70 by 80 feet, which with the preparation room, 24 by 34, houses a complete set of modern canning machines, many of them loaned and installed by the companies that

with two 50 gallon copper steam jacketed cookers with automatic stirrers for use in making jams, jellies, preserves, and fruit butters. A small 10 gallon tilting kettle and 25 gallon aluminum cooker are used constantly by the students in that course. A 80 gallon glass lined vacuum kettle has recently been installed for use in making high class jams, jellies, and syrups.

Utilizing Cheap Grades

The question of utilizing the smaller and cheaper grades of dried prunes became a matter of investigation in the preserving department a little over a year ago and experiments were conducted to discover a new product if possible in which these grades could be used to advantage. After repeated trials a prune butter, having much the appearance of apple butter but possessing a distinctive flavor, was hit upon. Its production in commercial quantities since that time has met with satisfactory success.

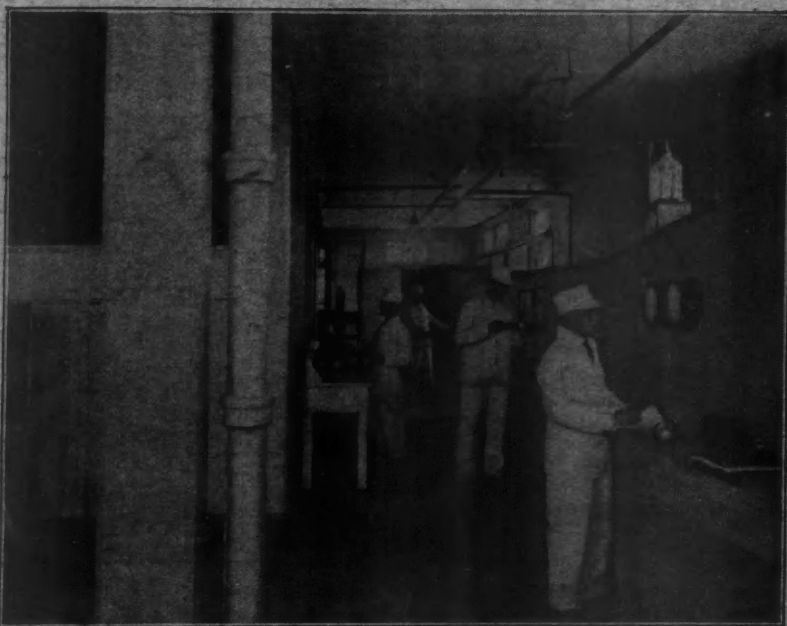
To make this prune butter the dried fruit may be either soaked first or boiled in water until soft. It is then run through a Kern lightning finisher which pulps the fruit and eliminates the seeds. The pulp passes through a 22 mesh sieve in this operation. Apples are then washed and ground in an ordinary cider grinder, par-boiled till soft, and also put through the finisher. The apple and prune pulp is then put together in the ratio of 95 pounds of apples to 75 pounds of prunes to which is added 65 pounds of sugar. This mixture is then boiled down to the proper consistency for a good spread and filled into containers while hot, sealed and then sterilized for 20 minutes and cooled.

While fresh prunes do not make a good butter, the product made from the dried fruit met with such favor that the college fraternities and townspeople near the college used the entire output of the "Hort" products plant. This is but one example of the type of work the department carries on.

Fruit Juice Equipment

The fruit juice department is equipped with a hydraulic press installed by the Hydraulic Press Company of Mt. Gilead, Ohio. A centrifuge used for clarifying juice was loaned by the Sharples Separator Company and a filler and bottling machine made by the United States Bottling Company is in regular use. Tanks necessary to hold the juice are provided and the product is prepared and bottled entirely by the students in fruit juice manufacture. Every

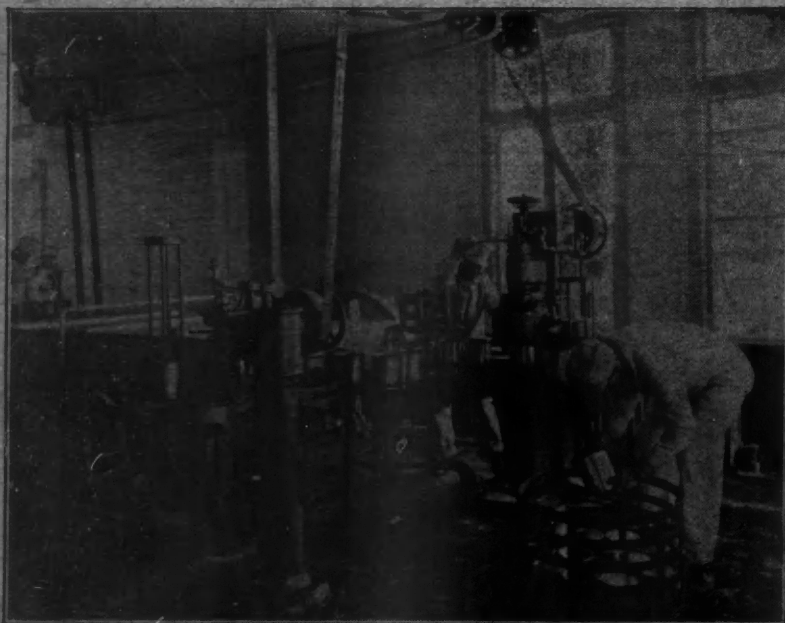
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The famous Oregon Tunnel Drier, built and operated solely for experimental purposes

the prosperity of the fruit growers. Already this new section has given to the country the methods of Loganberry juice manufacture, improved practices of prune and apple drying and several new products for utilization of what was formerly considered waste in the fruit products industry. Its work includes research in the field of fruit and vegetable canning, manufacture of preserves, jams, jellies, fruit juices, and fruit syrups, as well as extensive studies in the field of modern dehydration.

make them. Berger and Carter syringers, a Hawkins exhaust box, and American Can Company sealing machines are in regular use. Preparation tables are a modification of the standard California type packing tables, with water piped to each. The retorts have a capacity of 800 cans at one filling, enabling the plant to turn out as high as 10,000 cans a day, a volume amply large enough for all purposes of commercial instruction or experimentation. The preserving room is equipped



Modern sealing machinery and exhaust boxes are used by students



Students at work making jams and jellies in the preserving department

Are There Too Many Spokes in the Wheel?

By C. I. Lewis

FRUIT growers sometimes wonder why they seemingly get such a small proportion of the consumer's dollar and they may conclude that it is partly because there are too many people handling the fruit before it reaches the final consumer, in short, that there are too many spokes in the wheel.

The fruit starts with a grower, association, or local shipper, is hauled by truck to a community packing house or to the depot. Here the railroad takes possession of it and carries it to the destined market. The sales may be handled by a large distributor who sends fruit all over the United States, or it may be handled by some broker in some distant market who sells it for a small brokerage, or it may go into one of the big auction markets where a jobber buys it, this jobber may have bought the fruit or may be handling it on commission direct from the producer. The jobber may in turn sell it to a second jobber, who perhaps lives in a distant city and this man in turn may sell it to even a third jobber or wholesaler. Perhaps the fruit finally goes to a peddler who hauls it out to some suburb and sells it to a retailer, the retailer finally selling it to the consumer.

While this may be an unusual case, still much fruit passes through such channels and, every time it is handled there is a profit for someone and an overhead cost to be met.

Fruits and produce tonnage in this country has increased by leaps and bounds. In 1899 the vegetables, canned products and fruit from the point of origin represented 4,582,573 tons. In 1912 this had increased to 12,130,061 tons, while during the past three or four years the tonnage has varied between 17 and 19 million tons at the point of origin. This represents nearly a million cars of produce annually and an increase in consumption of over 300% and shows that the American consumer is prosperous and is becoming a more generous buyer.

While this tonnage has been increasing the number of varieties has been increased rapidly. Thirty years ago about all the fruit we had in winter was apples. Later the banana became quite prominent and finally the orange. There has been a large increase in species and varieties offered to the consumer. Not only do we have our standard varieties of apples and bananas, but many new varieties of oranges have been introduced to the trade, such as the Valencia, Pineapple, Temple and the Satsuma. Other fruits which you will find very common on the fruit stands today which were not seen from ten to thirty years ago are grapefruit, quava, loquat, kumquat, mango, avocado, Japanese persimmon, opuntia; new melons and varieties such as the Rocky Ford, the Persian, the Casaba and the Honeydew; fresh figs, pawpaw, Loganberries, small fruits in great profusion, in fact, in many of our great cities we now have strawberries offered every day in the year. California grapes, apricots, and nectarines, plums and peaches, instead of being offered in August only, are now on our market from May to December.

The Producer

The producer cannot reasonably expect to make money on every fruit crop every year. No business is profitable every year; but he should expect a good average profit over a term of years. Neither is it possible not to expect some waste. There will always be a certain percentage of culls. It probably does not pay to spray and carry on orchard management to the point that one hopes to get 100% clean fruit, for the cost would be prohibitive. Likewise, it is not possible to take all the culls and make money out of them; some will not pay the cost of handling and will fall to the ground and rot. There is much foolish sentiment written often by city writers on this waste and there are other groups of writers who think the farmer should be a philanthropist and feed

the poor and needy regardless of whether or not it breaks the farmer financially to do so.

The greatest salvation of the producer seems to be to organize in large groups because he is lost as an individual and he is going to become more and more a nonentity as an individual as time goes on. He should organize a good, strong local and these locals can affiliate into centrals and develop a marketing organization of their own or can form connections with some big distributor or some big co-operative marketing agency.

The producer must work for consolidation of tonnage because it is only by such a policy that he brings about reforms and benefits which are essen-

raisin, prune, walnut and almond of that state are also examples of efficient marketing coming from the consolidation of tonnage. This marketing means wide distribution, the development of new carload markets, and relatively low overhead and sales cost. They generally conduct an advertising campaign and are gradually increasing per capita consumption, which is essential to any fruit industry.

While the season for such fruits as raisins, prunes, oranges, etc. has been lengthened, on the whole the more districts that go into the production of fruits the shorter the season becomes for any one district. Also as the varieties and types increase the

central buildings can be better equipped and are cheaper per unit than the small individual houses. There is a less number of rooms to keep in order, less number of buildings to depreciate, and a much less capital is really invested in the industry. Likewise, a superior form of inspection can be carried on. Thus we gain efficiency, lower costs, and a better product.

Transportation

The lack of cars is a serious proposition. It is evident that the 113,000 refrigerator cars are not enough to handle a million cars of products. Much time and expense could be saved, however, by cutting down the number of cars diverted, by saving demurrage and by establishing a marketing system which gives wider distribution and more f. o. b. sales. Transportation rates are too high. Undoubtedly, now that the railroads are beginning to make money again these rates can be reduced to pre-war figures by allowing the railroads to run their own business. Fruit growers all over the country should agitate this question strongly and see that transportation figures are eventually brought down to a reasonable basis. A great relief to the fruit industry could be brought about in that way.

The Distributor

One of the principal men in handling the fruit is called the "distributor." He handles his fruit from some distant market and sells it in the various markets of the country. As a class they are able men. Some however make loud claims as to their efficiency as distributors who ought to change their title to "concentrator." They simply sell in three or four markets, make few f. o. b. sales. They feel the markets from day to day. They may auction now and then. They sell to jobbers who in turn sell to other jobbers. Certainly such a distributor is of very minor benefit to the fruit industry and could easily be done away with.

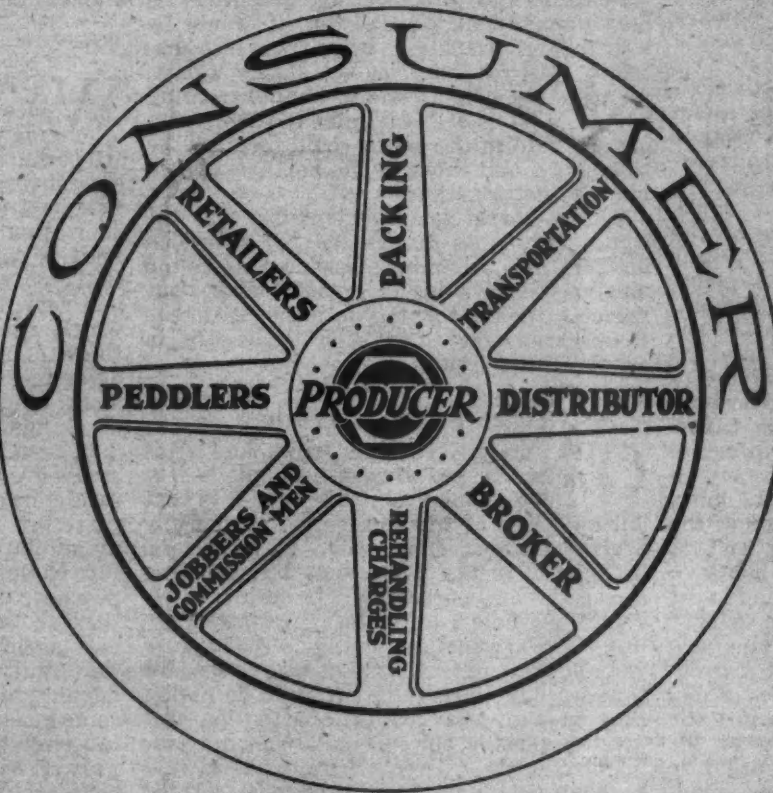
The Broker

The dried or canned fruit broker is a fixture, an essential part of marketing machinery. Perhaps more so than the fresh fruit broker. There are, however, fresh fruit brokers in nearly every market who are very able men and who work on a narrow margin. They have built up a fine clientele. They are efficient marketing agents. During the time of over supply, they may be crowded however as they rarely have storage facilities.

The Jobber

The jobber has been too harshly criticised, from the producer to the consumer. Whenever the word "middleman" is mentioned every one thinks of the jobber, commission man or wholesaler and I use these three as representing the same type. He is not a profiteer in any sense of the word. Formerly great profits were made in the business but the past few years probably the profits dropped from 7 to 10 per cent. A report recently got out by the International Apple Shippers would indicate a gross profit of about 9.79%, leaving a net profit of only 2.42%, but out of 9,476 cars which were recently handled they found the gross profit was only 3.16%, which when operating costs are deducted means a loss of 2.39%, without counting salaries and interest on investments. While these figures are due partly to the fact that the produce business has been going through a period of deflation and readjustment, nevertheless the jobber has come in for much unjust criticism. He is generally a pretty substantial man and his rating can easily be found out if one cares to take the pains. He is a hustler, puts in long hours and turns a tremendous amount of fruit into the consumer's channel. He can be criticised in some ways. Perhaps at times he encourages too many shippers to

(Continued on page 12)



tial. We have some splendid examples of consolidation. Take the banana industry, largely handled by one big concern. Fifty years ago the banana was unknown. Today we consume from 45 to 50 million bunches a year. They are distributed to every hamlet in the country and so sold that the producer, the handler, the retailer all make money and the consumer buys the fruit at a fair figure. The orange is another good example. Probably 75% of the oranges are either handled by the California Fruit Exchange or the Florida Citrus Exchange. These organizations have built up strong marketing machines. The California

shorter the season becomes for each. Apples must be largely out of the way by midwinter for by spring there are too many fresh vegetables and fruits arriving in the market. Thirty per cent of the apples should be sold f. o. b. before they are harvested and at least 60% should be in the consumers' hands by January 1st. Coupled with this policy the producer must fight to get quality plus yield because that means profit to him.

Packing Costs

Much money should be saved in packing by hauling fruit by auto trucks to central buildings. These



The foundation stones of marketing success



SAMUEL ADAMS



C. L. LEWIS

National Apple Convention

CERTAIN fruits seem to be well stabilized and are being sold each year in ever increasing quantities. We refer to such fruits as the banana and the orange, which are in relatively few hands, the banana being largely controlled by one company and about 75 per cent of the oranges by two big co-operative associations, one in Florida, the other in California.

Likewise the dried and canned goods business is being rapidly stabilized. The raisin business has grown by leaps and bounds and the per capita consumption is increasing steadily.

This same cannot be said of the apple. This fruit is grown in every state of the Union, is marketed twelve months in a year and there has been no national policy worked out regarding its development. There is little being done to increase the per capita consumption, to develop new markets and to undertake the constructive policy which will build up our apple orcharding. Perhaps one step which might be taken, which would be a step in the right direction and which might culminate ultimately in developing the apple along national lines, would be to call a national convention of the leading apple men of the country so that they could work out some definite policy.

We have far too many varieties in almost every district. They should be reduced down to a commercial standard. The pack should be standardized. There is a great deal that can be done along the lines of distribution, advertising, and educating the American public to the true value of the apple. It would be reasonable to organize the industry first along district lines, dividing the country into natural districts so that the growers in any one district could get together at opportune times to discuss the problems and work out a definite constructive policy. Later representatives of the various districts could be called together and could unify the work along national lines.

It will only be by concerted action that the apple will develop in the same way as the banana, the orange and the raisin.

The Co-operative Conference

THE first annual co-operative conference is to be called in Washington, D. C., in December. This is certainly a constructive step in the right direction. The co-operative bodies are becoming more and more a factor in American agriculture. Today nearly a billion dollars' worth of products are produced by members of co-operatives. This is a tremendous force which can be used for good. It can assume the leadership in agricultural affairs.

This conference called in Washington in December is to consider primarily the question of rural credits. It is well that they should do so, and they should work out a permanent rural credit system which the country will accept. Then the nation can forget the question of rural credits and it will cease to be a political question in any sense of the word.

In addition to the question of rural credits, it would be well for this conference to consider the question of our foreign trade and it seems to us some steps could be taken to regain this trade. To what extent we can co-operate with Europe and other countries is restoring this trade relationship.

In addition to this meeting, which will be held annually in Washington, it would be well to organize the co-operatives into districts. All of those on the Pacific Coast, for example, could have an annual meeting which would be of great value to them. Another group in the south could meet in the same way, and those in the northeast could likewise get together.

The co-operative movement has now become thoroughly recognized by American bankers and other business men as sound and constructive and of great benefit to our agriculture; in fact, the nation looks to the co-operative movement for leadership in solving the agricultural problems.

Our Foreign Trade

OUR foreign trade in fruits and fruit products has always been the safety valve of our business. True it is that during years of light crops we shamefully neglected our foreign trade. Nevertheless, in years of plenty it was only by exporting a considerable portion of the crop that we kept the whole market in a healthy condition. We are just beginning to realize how valuable this export market was to us now that we have largely lost it, and we realize that in the past too little attention was given in placing our foreign trade on a sane business plane. Great Britain has always been our best market and is so today. About 65 per cent of the apples exported go to England alone and that country is a good market for large quantities of canned goods and dried fruits, especially prunes which are known there as plums. Lately a growing market for American raisins is being built up throughout the British Empire. Certain countries in Continental Europe were formerly a very good market. Scandinavian countries have always been a fair market. Just before the war Germany was using an ever-increasing quantity of fresh apples, canned goods and prunes; in fact, the annual importation of prunes from this country to Germany amounted to about 15 million pounds annually and the year before the war broke out Germany bought 60 million pounds of American prunes. France has never been a very good market. American horticulturists travelling through France report to us that good eating apples are exceedingly scarce; that the French do not seem to know what such an apple is, as most of the apples produced in that country are cider stock. It would seem that there would be a very fair market in the large French cities for good American fruit.

Possibly by all working together through some centralized effort we can rebuild this trade. Possibly the big co-operative conference to be held in Washington, D. C., in the middle of December, can undertake a discussion of this problem and help build up again our foreign trade in Europe. Mean-

while, let us do all that we can to encourage foreign trade in fruits and fruit products with South America, Australia and Asia. While these markets may to a certain extent be limited, still they have probably never been fully supplied and an ever-increasing quantity of our fruit would find a good market in these countries.

How to Diversify

WE ARE Publishing a number of articles on diversification in fruit growing and it is easy to see that there are perhaps three schools represented which have divergent opinions on the subject. The first is the school which believes in specialization entirely, claiming that wherever fruit is combined with general agriculture that too often the fruit growing suffers, and very ordinary or poor fruit is produced which generally is unprofitable. Then there is a second school that believes in diversification but believes it should all be along one line; that is, a man has talents or likings for one phase of agriculture; he may be a live stock breeder, a dairyman, a grain grower or a fruit grower and he is rarely interested in more than one line—therefore if he diversifies, he should take up similar lines. If he is an apple grower, for example, he can grow some plums, peaches, cherries, pears or berries rather than to launch out on some phase of general agriculture. The third group believe that fruit growing carried on to the best advantage should always be aligned with some general farming or other lines at least of agricultural activity, that in this way the grower will pass over lean years when, because of weather conditions he has lost his fruit crop. Probably differences of opinion on this subject will occur for many years, but like all similar questions, there is no one way in which to grow fruit. Probably in many sections and with many men high specialization will prove over a period of ten years to be most profitable, but with others it will prove unsafe to rely on that alone as they are financially unable to pass a single lean year and because of their temperament and surroundings in which they live, diversified fruit growing is by far the best. In some districts fruit growing and general agriculture could be combined. Dairying, for example, and prune growing or dairying and berry raising often seem to fit in nicely. There is a question as to how much a man can diversify with a fruit like the apple or orange which requires great skill, very close attention and which, to be profitable must be grown to a high degree of perfection.

To determine whether or not it is best to diversify and, if so, how, each grower should study his own orchard conditions very carefully and also analyze the results which other fruit-growers in his community are securing possibly by different methods than his own. This is much more sensible than to simply be swayed by some practice which a certain group of horticulturists several thousands of miles away may be practicing. No set rule can be prescribed which will prove to be the best under all conditions.

BETTER HOME DEPARTMENT

The Home Vegetable Garden

By J. W. Lloyd

THE healthfulness of vegetables has long been admitted. They have been considered valuable because of their adding variety to the diet, because of their bulk, which aids digestion, and because of the desirable effects of their mineral salts. More recently an additional reason has been found for the eating of vegetables. It has now been demonstrated that many vegetables are rich in vitamins. These newly discovered substances are absolutely essential to the maintenance of health; and it is now admitted that the free use of vegetables is one of the best means of securing an abundant supply of these health-giving substances.

City people can buy vegetables in the market when they desire them. People living in the country usually grow their own vegetables or have their tables less fully supplied than they should be. Theoretically a farmer or fruit grower may be able to go to town often enough to secure ample supplies of vegetables for his table; however, practically this is not usually done. The farmer or fruit grower should by all means have a garden of his own.

The vegetables that are grown in American gardens have been developed in many different countries and under widely different climatic conditions. This means that some thrive best in cool weather and some in hot; some demand a large quantity of moisture, and others are able to thrive even though the water supply may be quite meager. When an attempt is made to grow in the same garden various kinds of vegetables that normally thrive under different climatic conditions, it is necessary to adjust the times of planting to the climatic conditions of the region. In the North, cool season crops will be planted at the opening of spring; in the South these same crops are more often planted late in the fall. In the North the planting of warm season crops must be deferred until late in the spring to avoid injury from frost, while in the South very much earlier planting is feasible.

Grow Quality Varieties

In selecting varieties of vegetables for the home garden special attention should be given to securing sorts of vegetables that are capable of developing a product of high quality. While most people recognize that there are differences in quality in different varieties of peas and sweet corn, not so many realize the fact that similar differences in quality occur in carrots and beets. Due consideration should also be given to the fact that certain varieties of vegetables may thrive better in one region than in another. Varieties should be selected which are known to be adapted to the given locality, or in the absence of definite information on this point varieties with a wide range of adaptation should be chosen.

No matter what varieties are selected or what names appear on the seed packages, the precaution should be taken to secure the seed from a reliable source; otherwise the results are likely to be disappointing. There are a number of different strains of the same variety of vegetable. Some strains are earlier, more productive, more uniform, or of better quality than other strains sold under the same name. In general, the cheapest seed is not likely to be the best.

Use Manure Liberally

In preparing land for planting a liberal application of manure or fertilizer should be made, since it

takes no more work to cultivate a garden planted in rich soil than one planted in poor soil, and the rewards for the labor expended are likely to be much greater in the case of the rich soil.

It is unnecessary to expend very much time in hand labor in preparing a farm garden for planting. The regular tools used in preparing the soil for field crops can be used for the garden also and the horses made to do most of the work. Of course, it is necessary to use judgment as to the condition of the soil at the time the seed bed is being prepared. If the land is in the right condition for working—that is, neither too wet nor too dry—it is possible to prepare a seed bed sufficiently fine for the planting of carrots and onions by the use of a plow, disk harrow, spiketooth harrow, and plank drag. Of course, if the land is allowed to dry out after plowing or after disking, or even after harrowing, it is impossible to break up the lumps by the successive use of the tools named. However, if the preparation of the seed bed is completed by the successive use of the various tools without allowing time for the soil to dry out, an exceptionally fine seed bed can be prepared.

Use Long Rows

To save labor in the care of a garden on the farm it is wise to plant the vegetables in long rows, far enough apart to permit horse cultivation. If certain vegetables are needed only in small quantities so that one row would provide more space than necessary to devote to one vegetable, two or three different kinds requiring the same general care may be planted in the same row.

In general the arrangement of vegetables in the garden should be in the order of planting. One advantage of such an arrangement is that the unplanted portion is always in one area and may readily be fitted for later planting by the use of horse tools. In arranging a garden, care should be taken to plant the proper quantities of each kind of vegetable to supply the table of the given family adequately but not superabundantly. There is no use having a scarcity of certain vegetables or a great excess of others.

While much labor in caring for the garden may be saved by the use of horse tools for tillage, there are certain other labor saving methods that may be employed. Much time will be saved in hand weeding if the precaution is taken to cultivate very close to the rows while the plants are small. Furthermore, any weeds that appear in the rows should be pulled out while they are quite small. They can be pulled much more easily at that time than later and also do much less damage to the vegetables if not allowed to attain any considerable size.

The garden should supply a complete succession of vegetables through the season. A succession in some kinds of vegetables may be secured by making several plantings at different times. Another method is to plant at the same time two or three varieties of different degrees of earliness. Further continuation of a supply of vegetables may be secured by replanting to a late crop the area from which an earlier crop has been harvested. There is no reason why the garden should not furnish a continuous supply of vegetables throughout the entire season. Some gardens "give out" during hot weather. This may be due in many cases to neglect or oversight on the part of the owner.



Bean Combination Potato and Orchard Sprayers

Designed principally for potatoes and other truck crops, but quickly and easily converted into an orchard sprayer by removing the boom and attaching hose and gun or rods. Ask about them.

Spray—For Quality Fruit

DON'T try to get along with a hand pump or a little family orchard sprayer if you have a commercial orchard of any size. You can't afford to. If you are going to keep your trees clean and produce first quality fruit you've got to have adequate spraying equipment. You need an outfit that delivers plenty of pressure at the nozzles, has ample and dependable power, and with sufficient capacity to get the work done quickly and thoroughly at just the right time.

No matter how large or how small your acreage, there's a Bean in the 1923 line that will exactly meet your requirements. This season we've combined high pressure, big capacity, and ample power in outfits of surprisingly light weight and at very low prices. We also offer a new type of low-down construction to avoid tearing off the lowest-hanging fruit. Big wheels and wide tires placed directly under the tank on the larger outfits make them easy to start and easy to haul. At the same time we've retained all the sturdy dependable features which have distinguished Bean Sprayers for 38 years.

Send the coupon for our new catalog which explains these new outfits and important improvements in detail and describes the entire Bean line of Orchard, Truck, Potato and Combination Sprayers.

The Bean Spray Pump Co.

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We built the first
high pressure
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38 years
ago

BEAN SPRAY PUMP CO., 115 Hoarner St., LANSING, MICH.

Please send me your New Sprayer Catalog

Name _____

Street _____

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Kind of fruit grown _____

No. of acres _____ (60-52)

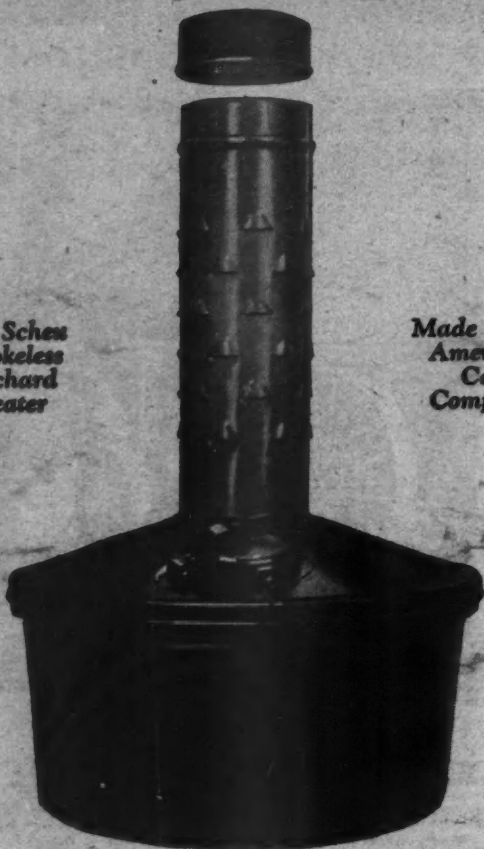
Bean Simplicity Outfit No. 224
Ideal for the small grower. Capacity 2 1/2 gals.
5 minutes at high pressure. Can also be furnished
without tank. New low price.

Orchard Heaters insure your profits

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Smokeless
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Fact,
not
theory



Last season, in California, in one of the worst freezes in citrus history, orchard heaters saved millions of dollars' worth of fruit. And that fruit sold at fancy prices, returning the entire cost of heating many times over.

Not only crop but trees as well are saved by proper heating. This has been proved over and over, wherever heating has been tried in an up-to-date way. The principles of frost protection are simple, and available to everyone.

An approved design

The experimenting on heater design has already been done. When you buy a Scheu Smokeless Orchard Heater (made by the American Can Company) you buy a heater of advanced design, tested and proved in actual service under all sorts of conditions. You know it will do what it is supposed to do—protect your orchard.

Hundreds of thousands of these heaters are in service in California alone; they have been officially adopted by the California Fruit Growers Exchange, after close study of all types of orchard heating appliances over a period of ten years or more.

The Scheu Heater won out on effectiveness, cost, weight, durability and capacity.

For deciduous fruits, too.

Almost every spring deciduous orchards suffer heavy damage from late frosts. Orchard heating will protect apples and peaches just as well as oranges and lemons. It will pay deciduous fruit growers to study California in this respect.

Where to get information

From the American Can Company and its orchard heater agents you can get all the information you need on successful orchard heating methods. Write to the nearest address given below.

There is a complete line of orchard heaters and equipment of Canco manufacture—which means workmanship of the highest grade, backed by one of the largest metal working concerns.

American Can Company

ORCHARD HEATER DEPT.

Toledo, Ohio

Orchard Heater Agents
Pacific Coast States—
W. C. SCHEU
Los Angeles, California

Southeastern States—
PIET VLAG
West Tampa, Florida

CANCO



Orchard Problems and their Solution

by Paul C. Stark
Associate Editor

Top-Working Trees

HAVE just gone back and re-read the article on top-working trees by W. O. Dutton in the February, 1922, American Fruit Grower Magazine and am going to avail myself of your offer for further information on this subject. I want to learn what I can and what I can't do in the way of top-working large bearing trees. Also want information on packing sheds and storage (winter) for an orchard of 1,000 to 2,000 barrels that is sold locally.—R. A. L., Wisconsin.

YOU do not give full information about top-working your trees. Of course, an old tree is much more difficult and requires more labor to top-work than the younger tree. Each individual tree has to be given special and individual attention. Sometimes it will pay to top-work, other times it may not.

On medium young or moderate age trees where you have an unprofitable variety, I would say it would certainly pay to top-work.

The cleft graft method is best to use in top-working apple trees. Usually top-working on a limb from one to two inches in diameter is better than trying to top-work on a larger limb.

In top-working a tree, I would prefer an early bearing variety that would come into bearing quickly after top-working and then there would not be as much time and as many crops lost.

In regard to packing sheds and storage houses, I would suggest that you write the following parties who have splendid storages on their grounds and in going through these, I have been impressed with the sound principles on which they are built—Mr. James Craig, Rosecliff Orchard, Waynesboro, Virginia, and Connecticut Valley Orchards, Westminster, Vermont.

Using Fillers

PLEASE write me regarding the use of fillers in between permanent trees in my apple orchard. Do you recommend them? If so, what is the best filler for my section?—G. S. T., New York.

THE filler question depends on the individual. If the man setting out an orchard will cut the trees out when they get too large and begin to crowd the permanent trees, the filler method is very efficient and very profitable.

I talked with an eastern horticulturist, whom I consider one of the best posted men in the country, and he told me that if he were planting an orchard in the state of New York, or under similar conditions, he would plant his trees 40 ft. apart and then put fillers in between, making the whole planting 20 ft. apart, square method for apples. He claimed he would get more efficient use of his ground and get much heavier production in earlier years.

With permanent trees planted 40x40, it would require 27 trees to the acre, but, by using fillers in between the trees so that the planting would be 20x20, 109 trees could be planted to the acre. Most of the fillers could probably be left in until they were 15 or 16 years of age and if early bearing varieties are used, it can be easily seen how much more profitable the orchard would be in early years. The fillers could be taken out at different times, taking out half one year and the rest a few years later.

In my own orchard, I have fillers planted, using early bearing varieties of apples. In sections where peach growing is a leading industry or where you have a good local market and peaches do well, they make good fillers. The fillers do not require any more cultivation than the permanent trees and, of course, do not take up any more land by planting.

How to Prune

I WOULD be very much pleased to have your advice on how and when to properly prune the following fruit trees. In 1921 and spring of 1922, I set out Delicious and Golden Delicious apple, one and two year old; Gold Nugget and Bartlett pear; Stark Early Alberta, J. H. Hale, Red Bird Cling, Eureka, and Krummel October peach; America, Gold, and Omaha plums. Did not prune these trees I set out in 1921. These trees have this year made a growth from 2 to 6 ft. Omaha, America, and Gold plum making the largest growth. Each tree has about 5 or 6 shoots from 4 to 5 ft. long. Apple, peaches, and pears have grown 2 to 4 ft. I am using Scaleside in fall and early spring as a dormant spray and Sulfocide and combinations for fungus and insects for summer sprays.—F. P. R.—New Jersey.

IN REGARD to the pruning of your apple trees, this pruning will be largely of a corrective nature. That is, with the idea of preventing any bad crotches, crossed limbs, or too many branches in a certain space. The tendency in recent years has been toward less heavy pruning, simply aiding the tree to correct any bad arrangement of branches or crotches and very moderate heading back. It is the consensus of opinion of the scientific horticulturists, as well as the orchardists, that pruning practices have been too severe and that this severe pruning has a tendency to delay the fruiting of the tree. There is too little space to go into full details, but the following broad principles are the ones that I am following in my own orchard and have found them very satisfactory.

I am using the modified leader type of pruning for my apple trees. I selected the branches, aiming to distribute as evenly as possible up and down the trunk and around the trunk. I have tried to picture the tree as it will eventually grow and have aimed to produce a limb to fill out the various spaces. These main limbs have been headed back very little during the first two or three years.

The Delicious, which you mention, is rather an upright grower and for this reason, I have done very little heading back but have allowed the terminal bud to grow out during the first several years. This has resulted in the Delicious being more of a spreading tree than would have been the case if I had headed them back severely when the growth would have been more upright.

In order to produce heavy bearing in the center of the tree, I have headed back some of the center branches during the month of June. These small light branches will produce more or less fruit spurs and will cause a heavy production in the center of the tree, particularly while the tree is young. Later on, they may have to be removed.

Each main branch is developed with side branches, similar in many respects to the main trunk of the tree. The aim of the modified leader type pruning is to produce from 9 to 13 branches evenly distributed from a height of in about 24 in. of the ground up to 5 or 6 ft. from the ground and at this point, the leader is cut out very similar to the way it is handled in open head type. With a strong main trunk and with good strong well distributed main branches, a stronger production is gotten than with the open head type where most of the branches come out close together. Do not let too many branches grow on your apple trees as they will tend to make a bushy type and that is the wrong idea.

In your peaches and plums, you should follow more the open head type of pruning, thinning out superfluous branches but leaving plenty of young growth to produce the fruit.

Unique Work

(Continued from page 6)

fall the demand for canned sweet cider is large and great quantities of it are made and sold.

Dehydration is an important part of the work carried on and the part of the building given over to this is equipped with the largest scientifically constructed tunnel drier for investigational purposes in the United States. It has a capacity of 8,000 pounds of fruit at one filling, is steam heated, and operates on the recirculating draft system. Temperature and humidity are regulated by automatic Taglibus and Taylor controls. The fans are operated by a 10 horse power variable speed electric motor.

Oregon Tunnel Drier

The Oregon Tunnel drier, as it is now known, was designed and built by members of the Oregon Experiment station staff. It proved so successful in turning out a superior product in a much reduced drying time that requests for plans for its construction have been received from many parts of the world. Blue prints of the dryer have been sent by request to Iowa, Illinois, Florida, and Austria, and Australia, while men interested in it have come from California and other neighboring states to examine it.

Students majoring in horticultural products may now take a four-year degree course and even continue work for a master's degree as two men have already done. Courses offered deal not only with the actual practice but also with the scientific principles underlying food preservation and processing. These subjects include work in the chemistry and bacteriology of foods as well as in the growing of fruits and vegetables and their manufacture into finished products. Special emphasis is laid on research work looking to the transforming of waste products into confections, oils, or other food materials.

One student working on waste utilization devoted considerable time and effort to working out some means for using apple pomace other than for stock feed. The result of his labors was a new confection distinctive and pleasing in form and flavor which promises to meet with no little favor.

Construction of plants and installation of machinery is another phase of the work given. This includes a study of modern machinery and methods of large scale preservation of food stuffs. All methods advocated are those accepted in commercial practice, keeping always in mind the possibility of improvement.

Practical Side Emphasized

Every student is required to become familiar with the practical side of plant operation and must engage in the actual manufacture of food products using most approved methods. No student is considered proficient until capable of handling the entire plant alone without an overseer in charge.

The business side of the industry is not overlooked as it is realized that men must be trained with a view to entering trade. For that reason cost accounting and training in purchasing and selling are required subjects in the course.

Winter short courses covering briefly the main points in the regular subjects are offered in the winter for the benefit of owners, managers, and foremen of commercial concerns. These continue four weeks and are arranged to give those men a better insight into the scientific handling of products in their own plants. Men from 19 different canneries in Washington and Oregon attended the first annual short course given in February of this year.

The canning industry and the fruit growers of the entire country are fortunate in having this work carried on in one of the greatest technical institutions in the United States where an enrollment of more than 2,000 enables the horticultural products section to choose from a large group

of students. Before taking up their major work to any extent, all men are required to take certain basic courses intended to get them well grounded in the fundamentals before specialization is attempted.

Graduates in Demand

Men graduated from this section of the horticultural department can go at once into good positions. They are strongly advised however, upon leaving to enter some plant and work up from the bottom, which may be done rapidly. In this way they can establish themselves and show their ability much better than if high positions were accepted at first. The demand for graduates has always exceeded the supply thus far and bids well to continue.

The first man graduated from horticultural products has been given a contract for the coming year at a much increased salary and a bonus on the year's profits. Others are, without exception, doing well in their chosen field.

Instructional work of the department is in charge of E. H. Wiegand who organized the work soon after the course was established. Professor Wiegand received his training at the University of Missouri where he was graduated in horticulture. Following that he had 13 years of actual cannery experience in Michigan. During that time he operated an orchard, which gave him experience in the production and handling end of the business.

J. C. Bell, a graduate of the Montana Agricultural college, is chief assistant to Professor Wiegand. Mr. Bell has had actual experience in jam and jelly manufacture in Oregon as well as considerable experience in orchard management in the Bitter Root Valley, in Montana. He took his master's degree under Professor Wiegand in 1920 and was put in as assistant in the department that fall.

If past accomplishments and the present predictions of leading men in the industry may be taken as a guide, the horticultural products section of the Oregon Agricultural college is only at the beginning of a long period of usefulness and service. Situated as it is in the midst of a 16 million dollar fruit industry where canneries and related plants are springing up over night, there is every reason to believe that it will remain for many years the center of scientific instruction and research in the field of fruit products.

Strawberry Crank

(Continued from page 3)

soms as fast as they appear. It is a tedious job, especially with the ever-bearing varieties but it positively must be done day after day until they cease to appear, or, at least in the case of the everbearers, up to about the last week in June. If the weather is very dry I have found it advisable to keep all fruit buds picked off until the middle of July or even later.

We are often asked which varieties are best or most profitable. This is a difficult question to answer. There are so many excellent varieties that it would be hard to say which is best. I will venture to say that there is no "best" variety for all purposes. I have grown perhaps over a score of different varieties but am now growing only four spring, or once-a-year varieties and two of the best known everbearers.

Although we are growing several other kinds of fruit for market in a limited way, we specialize in strawberries because they are more in demand and consequently more profitable here.

Our soil is hard to work. Part of it is poor; in fact, it will not grow corn without fertilizer, but I am growing profitable crops of strawberries on this land with very little fertilizer. I am making these old clay banks produce something besides scrub oak, sumac and hazel brush. I have at this time four strawberry patches, about one acre. Last season I picked and sold 1,520 quarts of berries from less than one-fourth of an acre.



THE BEST HOSE SERVICE—THE LOWEST COST



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GOODYEAR Spray Hose gives long, satisfactory service, uninterrupted by frequent delays for repair. It is easily handled, so that more and better work can be done. And, because it lasts longer, it costs less to use than ordinary hose.

This stout, long-lived hose is made with a thorough knowledge of the service in which it is used. It is protected against scraping, dragging and weather by a tough, thick cover. Its body is strong to resist the high pressure required to produce vapor at the nozzle.

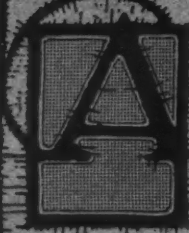
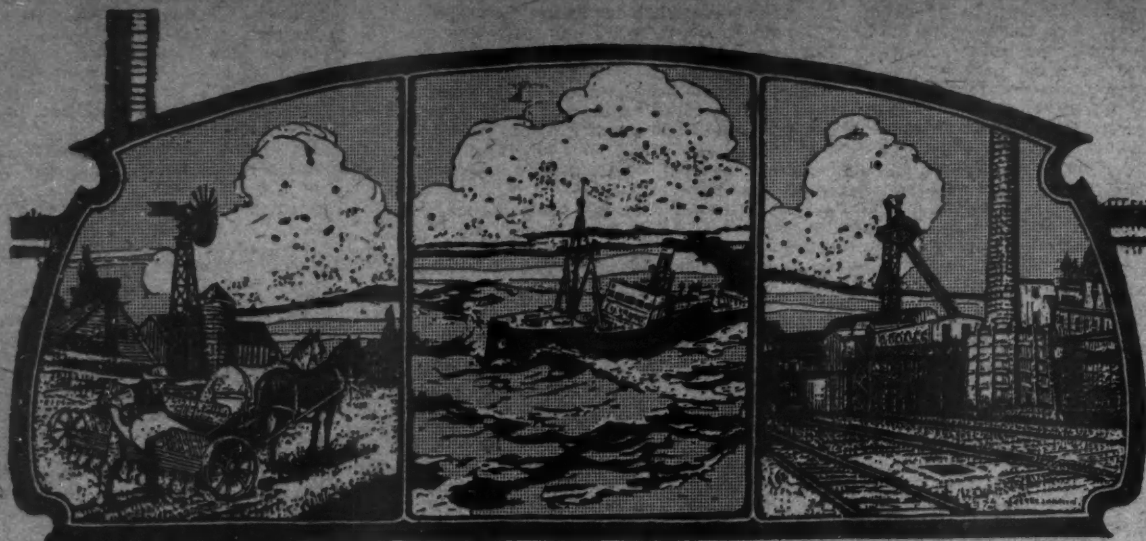
The tube of Goodyear Spray Hose is made from a scientifically prepared compound that resists the deteriorating action of strong solutions.

Insist upon Goodyear Spray Hose when you buy new hose. And see that any new spraying apparatus you may select has this dependable hose as equipment.

If your dealer hasn't Goodyear Spray Hose in stock, write to Goodyear, Akron, Ohio, or Los Angeles, California.

Goodyear Means Good Wear

GOOD YEAR
SPRAY HOSE



ASK FOR POTASH

The present conditions in the business of the farmer and in the fertilizer industry call for serious thought. Both are going through a readjustment period, with its hardships and doubts.

The farmer may well ask whether he is using the most profitable fertilizer. The fertilizer salesman may well inquire whether he is selling the kind that will do the farmer the most good, and lead to larger sales in the future.

During the war America could not get Potash, and the use of acid phosphate increased. Central Europe could not get phosphates, and the use of Potash Salts increased. Today plenty of Potash can be had at less than pre-war prices. Now is the right time to restore the balance by using more Potash in the fertilizer formulas than the average amount used before, 5 to 10 per cent.

Crops take from the soil very much more Potash than phosphoric acid. On any soil where Potash has been profitable it is not unreasonable now to use at least as much Potash as phosphoric acid. Ask the fertilizer agent for prices on this kind of goods, and rebuild your soil while Potash is cheap.

Recently it has been shown that a lack of available magnesia causes serious injury to important crops on some soils. German Kainit and Manure Salts furnish this soluble magnesia without extra cost.

SOIL & CROP SERVICE, POTASH SYNDICATE

H. A. HUSTON, Manager

42 Broadway

New York City

Ask for POTASH—Buy POTASH—Use POTASH

POTASH PAYS

The Play at Oberammergau

By Mary Lee Adams

(Continued from November)

But there were some tears, not from women alone. I believe that if the great Irving himself could have witnessed the repentance of Judas he would have felt that he was learning something. It was as heart-rending as anything I have ever seen. The appeal it made was as broad as humanity, and went straight to the hearts of that great mixed assembly drawn from all corners of the world.

Looking over the crowd with its plentiful sprinkling of oriental faces, I thought of that verse from the

bible, "Parthians and Medes and Elamites, and the dwellers in Mesopotamia and in Judea and Cappadocia, in Pontus and Asia, Phrygia and Pamphylia in Egypt, and in the parts of Libya about Cyrene, and strangers, Jews and proselytes, Cretes and Arabians," to which must be added many catholic clergy, many cultivated Europeans, many simple peasant folk, Americans as thick as flivvers at a country picnic and—it need scarcely be said—the ubiquitous Japanese.

Among them all, it seemed most strange to see the Jews. What must have been their emotions as they witnessed the scene in which the unwilling Pilate at last yielded to the importunities of the priests and the people, and in doing so said "I cannot understand these people. But yesterday they acclaimed him as their King and today they demand his crucifixion."

Pontius Pilate himself was a noble figure, and interpreted his part faithfully yet with a skill that made one pity far more than despise him. Anton Lang, as you know, is a man of wonderful spiritually beautiful appearance, and he invested his role with perfect dignity, sweetness, strength,

simplicity and pathos. He has played the part of Christus for the third and last time. It is an exhausting role, and it is said that after the intensely harrowing scene of the crucifixion he is often borne from the stage unconscious.

In 1930 he will be too old to represent the character or support the fatigue of the part. It is expected that his cousin, also a Lang, who came within one vote of election to Anton's part this year, will succeed to this most honorable and coveted role. He was chosen for the part of Nathaniel and has a splendid stage presence. He will make a worthy successor to Anton Lang. It is a distinguished family, and there must have been a dozen Langs altogether in the performance, including the chorus and tableaux.

These pictures are beautifully staged, and on that particular day shafts of sunlight fell, as if by special order of an artist, just on the most effective spots, lighting up the faces and figures of men, women and children who wore the simple but intensely colorful costume of the time and tribe they represented. There is music and song accompanying the pictures between each act; nearly a hundred musicians and singers and sometimes as many as several hundreds of people on the stage in the biblical tableaux. The effects were not only most interesting but also exquisitely artistic.

And to think that this is all done by peasants living in a remote little mountain village, unvisited by the outside world for long intervals of years and then becoming for a brief season the center of interest for practically all civilized nations. I asked a thoughtful friend how he explained the extraordinary perfection of their artistry. He replied that he believed it was because they had always served their own God. I like to think so, but when I consider our own more remote rural populations and try to estimate how many centuries it would take them to develop anything nearly so remarkable, I do not like to push the inference to its conclusion.

These people certainly have the advantage of good looks, and this I do believe comes from the serene purity of their lives. Many of the men were extraordinarily handsome and the women almost universally so. The Mary was lovely beyond words, the Magdalen a truly beautiful and charming woman. It is hard to pick out, among so much excellence, those who are most worthy of mention. Not a single false or jarring note was struck. The reserve which never overaccentuated a situation, was as admirable as the completeness with which it was presented.

Feeling as I do about these people and their performance, it was with something akin to disgust that I read an item in the Paris edition of an American paper. It stated that the Pope, having heard disquieting rumors of the sanctity of the performance being smirched by the profiteering spirit of the performers, had sent a special emissary to learn the truth. The emissary returned and, with a shake of the head, reported that it was all too true. For which reason His Holiness had issued an ordinance, or a ban, or something of that kind forbidding the play to be given in future save in the presence of monks and nuns.

I simply cannot believe this report. The immense force this play exerts in spreading the spirit of Christ, must be obvious to all. How then can the Father of the Roman Catholic church wish to deprive the spiritually needy world of such an ennobling inspiration? Another report which up to this time I have heard neither confirmed nor contradicted, is that the peasants, having lost such a large sum of money through this summer's performance, are considering with some unwillingness the offer of a moving picture concern which will pay one million dollars for the privilege of putting the Passion Play on the silver sheet. (Continued on page 31)

Spokes in the Wheel

(Continued from page 7)

grow too big a tonnage and under the present system of marketing overloads the retailers who find that the products depreciate and decay. The jobber can be criticised for staying too long in congested districts and attempting to do business in the same cramped quarters as his fathers did twenty years ago. He often fights improvements, keeps too little help a few hours of the day and too much help the rest of the time. His methods are often antiquated in regards to handling. He does not have the room to use gravity carriers, cranes and machinery which would greatly reduce the cost of handling and bring his business up-to-date.

Rehandling Charges

These are one of the most aggravating propositions to meet in the fruit game because in the aggregate they are tremendous. Whenever fruit changes from one hand to the other, whenever it has to be trucked, unloaded, reloaded, reshipped, there is a tremendous cost which mounts and mounts and undoubtedly this is one of the items which gradually can to a considerable extent be reduced and eliminated. In some big markets there have been abuses of these rehandling charges and undoubtedly at times they have been higher than is necessary.

The Wholesale Market

Taken by and large the average wholesale market of the American cities is not an efficient proposition. It is congested, facilities have long since been outgrown, the methods of handling are antiquated and expensive. A man well acquainted with the jobbing trade recently told me that in one of the largest American cities there was probably a million dollars worth of products stolen a year, and when one visits these congested districts it is easy to see how this can be brought about. There is too much handling by man power, too much rehandling, too much redistribution, which is the result really of too much concentration in districts where facilities are not ample to handle the products in the way they should be handled. It is gratifying to know, however, that steps are being taken to remedy this condition and we can expect in the next few years much relief from this source. Of course, we can conclude however that it costs far too much to handle the food after it reaches a typical big city.

The Auction

Nearly all the fruit which is imported into this country is sold in the big cities through the auction. A very large per cent of the oranges in seaboard markets are sold so but not in interior markets. A huge tonnage of berries, cherries, plums, peaches, pears and other perishables is moved through auction channels. The auction is capable of moving a huge tonnage in a short time to many buyers at a low cost. Apple growers have never felt that the auction was the proper way to dispose of such fruit. They may be partly right and wrong in this. The fact that apples are produced in every state of the Union complicates the question somewhat but possibly it is best to try out the auction thoroughly because it has been found at times to be very valuable in the moving of an increasing tonnage of apples.

The Peddler

This fellow is probably the most irresponsible of any connected with the fruit business. He does not care about the producer, the consumer or anyone else connected with the future of the industry. He is often a man whose business ethics are more or less questionable and will resort to all sorts of methods to make money. At times he works on a narrow margin but too often he is looking for profits which are unreasonable. Of course, his costs are high but nevertheless he is not a link in the chain which is developing a fruit business along good lines.

The Retailer

The retailer is generally classed as

a man who is making an enormous profit but on the whole his margins are very narrow; in fact, on some staples like coffee and sugar they are probably too narrow. His margins on vegetables and fruits are unreasonably high, although he will often claim that were these products given to him he could not sell them for less. The trouble is he expects too big a turnover and he allows much of the stock on hand to wilt and decay, which makes his losses so high that he feels that he cannot sell for less. He needs to be educated along the lines of a big turnover and a narrow margin and this can be brought about by intelligent co-operation and work but it is going to take lots of hard work to do it. Occasionally his profits are too high. Recently this summer we traced the sale of grapes. A four basket crate which wholesaled at \$1.25 a crate, the retailer charged \$1.25 a basket. Now from the point of the producer this was 300% but if you always work on the basis that there is never more than 100%, then this man made 75%; but whether he made 300 or 75 per cent it is immaterial. The fact remains that he bought something for \$1.25 and sold it for \$5.00, or a margin of \$3.75 to meet his overhead expenses and profits. This is an exaggerated case possibly and is not typical but such things are happening very fre-

quently. The retailer does not follow the market downward, neither does he follow it up. He unloads whatever he has on the basis on which he bought and starts over on his new buy. The chain store perhaps is the salvation in the retail business. Two or three years ago when prune growers on the Pacific Coast were trying to get 5 and 6 cents a pound for their prunes, some of the retailers were asking 50 to 35 cents a pound. The big chain stores came in and offered two pounds of small prunes for 25c, or a pound of large ones for 19c, and brought prunes into consumption.

There are far too many retailers in the country. Charles C. King recently writing in the "Produce Dealer" of Philadelphia, says that there are 3,000,000 retailers in the United States, or one person in twenty is in the retail business. A report from the retail grocers of Pennsylvania shows that in the United States there are 835,212 groceries or delicatessens. This is exclusive of fruit stands, and peddlers, but this means one of these stores for every seventy families. There are 24,000,000 families in the country.

There is far too much competition, too many buildings, too many clerks, too many overheads, too great an investment. The number in the wholesale trade has been reduced since the

war, but the retailers have continually increased. During the war we encouraged probably too many food handlers and anyone who does not know what else to do goes into the retail business. Sometimes with three or four hundred dollars one can establish oneself in such a business.

The fruit retail business has changed hands largely from the Italians to the Greeks. The latter knows little or nothing about the fruit which he sells, often does not know the varieties, but he is interested and willing to be educated and wants to learn.

Too Many Handlers

We have shown that there are too many retailers and wholesalers in the game and more and more are getting into it. The number is increasing very rapidly and must materially decrease before relief comes. The number of distributors has increased 50% in the last twenty years, while the number of producers has decreased. If this keeps on in another score of years there will be as many handlers as growers; that is, there will be as many in the non-productive distribution work as there are in the productive work. This is a bad economic situation.

Parcel Post

This has been a big disappointment to the producer. It is very limited and

(Continued on page 15)

Apples and Apple Branches
Sprayed with Arsenate of Lead—

From Actual Photographs



Without
Kayso



With
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KAYSO—The Casein Spreader

Spreads the Spray and Makes It Stay



GIVES COMPLETE COVERAGE—Ordinary spray collects in drops on smooth surfaces of buds, twigs, branches, leaves and fruit, leaving large unprotected spaces between. Kayso enables you to cover your trees completely with a protecting film of spray, leaving no unprotected spaces.

KAYSO KEEPS SPRAY FROM WASHING OFF—Rains wash off the poisons and destroy the efficiency of your sprays. Kayso will hold the poisons on your trees long after the ordinary spray washes off.

KAYSO MAKES SPRAYING MORE ECONOMICAL—Because of increased spreading and wetting properties a tank of spray containing Kayso will cover more trees than ordinary spray. Kayso reduces waste of spray by preventing it from collecting in drops and rolling off the smooth surfaces of fruit, leaves and bark, leaving them unprotected or only partially protected.

RAISES MARKET VALUE OF FRUIT—Blotches of poison cause mottled coloring of the skin, making the fruit unsightly and producing spray blemishes. Kayso spreads the spray in an even film—allows the fruit to color fully and reduces arsenical burns.

FOR DORMANT SPRAY

The dormant spray kills by contact. The microscopic spores of Brown Rot, Scab, Curl Leaf and San Jose Scale on the uncovered spaces will grow and infect the whole tree.

Kayso makes the drops of spray run together, spreads the poison into the small crevices where the pests seek protection in winter and keeps the poison from readily washing off.

Send for new Descriptive Circular.

CALIFORNIA CENTRAL CREAMERIES, INC.

175 Franklin Street New York

SAN FRANCISCO CHICAGO LOS ANGELES

DEALERS who have not already stocked Kayso should take notice that Kayso is used throughout the United States. Be ready to supply your trade. Correspondence invited.

Ask your dealer, or send coupon to New York Office

Enclosed please find 40 cents. Mail me sample package KAYSO, sufficient for 200 gallons of spray.

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MYERS SPRAY PUMPS



You are interested in spraying. You realize its importance and what it means to you in the production of larger and better crops of fruits and vegetables.

Perhaps you have but a few fruit trees or just a small orchard or vineyard to spray. Or you may live in one of the great fruit belts where thousands of acres are planted to trees and where spraying is carried on extensively and scientifically. No matter where you are located, or how large or small your spraying activities may be, the important point to remember is this—MYERS SPRAY PUMPS come in styles and sizes to fit any need. And don't forget—every Myers Spray Pump regardless of type or capacity is uniformly constructed out of the best of materials, is equipped with high grade hose, standard nozzles and accessories, and comes to you with a guarantee for efficient service in the application of spraying materials.

If the equipment you have been using is worn out, or if it is too small for your needs, or if you intend to organize or join a spray ring or club, write us for a copy of our new Spray Pump Catalog, No. 3223. It's just off the press and ready for distribution, and contains illustrations, descriptions and valuable information about Myers Spray Pumps and How and When to Spray. Write today—the Edition is limited.

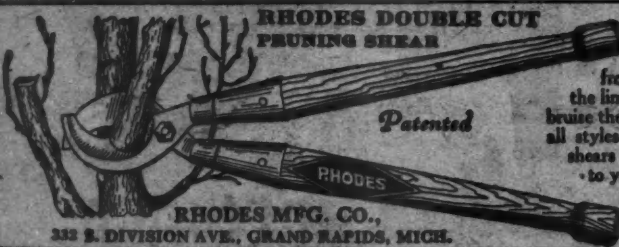
LEADING DEALERS EVERYWHERE SELL MYERS SPRAY PUMPS

CATALOG FREE ON REQUEST

FOR SPRAYING, PAINTING, WHITEWASHING AND DISINFECTING

THE F. E. MYERS & BRO. CO.
150 ORANGE ST. ASHLAND, OHIO.

DEALERS IN ALL STATES. MYERS SPRAY PUMPS FOR EVERY PURPOSE. SPRAY UNLOADING TOOLS AND DEER HANGERS SINGLES.



RHODES DOUBLE CUT PRUNING SHEAR

Patented

THE only pruner made that cuts from both sides of the limb and does not bruise the bark. Made in all styles and sizes. All shears delivered free to your door.

Write for circular and prices.

RHODES MFG. CO.,

332 S. DIVISION AVE., GRAND RAPIDS, MICH.

Play Safe!

Protect Your Trees and Fruit with

Skinner Coke Heaters



Frosts and freezes, it is estimated, cost American fruit growers an annual loss of sixty million dollars. Much of this will be avoided when growers take proper precautions by using approved methods of frost protection in orchards and groves.

Skinner Coke Heaters are effective in preventing frost damage to fruit trees. They have proven their value in tests under actual frost conditions. Properly cared for they will last for at least ten years.

Light and easily handled, the construction is simple and they may be readily taken apart for oiling and storing during the summer. Skinner Coke Heaters are clean. Only a clean white smoke is emitted for a short while after they are lighted, no soot or dirt.

They are economical. Skinner Coke Heaters are the lowest priced on the market. They cost less than one-third as much to operate as ordinary heaters.

They are quickly lighted. A special torch supplied with the heaters, enables one man to light a great many heaters quickly. A specially constructed pocket in the grate makes lighting easy.

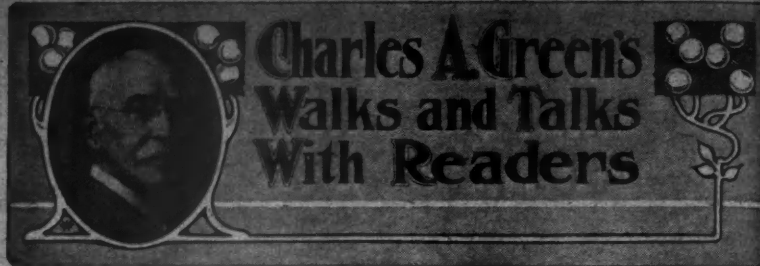
Skinner Coke Heaters have long burning capacity. They will burn with maximum efficiency for ten hours and require no further attention during the night.

Radiant heat only will keep Jack Frost at a safe distance. The radiating surface of Skinner Coke Heaters is large and throws off a terrific volume of heat. Radiant heat from coke is two and one-half times as great as that from oil.

GET THIS ATTRACTIVE ILLUSTRATED BOOK FREE

An attractive little book, giving valuable data regarding frosts and telling you more about Skinner Coke Heaters, is yours for the asking. Write for your copy now. A postcard will do.

SKINNER MACHINERY CO., FIFTH ST., DUNEDIN, FLORIDA



Charles A. Green's Walks and Talks With Readers

The New Somerset Apple

I AM sending you a small box of apples of a kind I am raising on my farm. I call it Somerset after the name of this county. Its season is from September first to November. It is a vigorous growing tree. If grafted on a tree it will bear the third year. I have had these trees eighteen years and they have never failed to bear a fair crop of apples. The hard winter that we had a few years ago, which killed all of the Kings and Baldwins in this part of the country, did not kill my Somerset. The blossoms are large and open late. I could send you a few scions of these trees next winter or spring. In the interest of humanity these trees ought to be grown largely. Please let me know what you think of my Somerset apple. —Subscriber, North New Portland, Me.

C. A. Green's Reply: The box of large and beautiful red apples came to me in prime condition. I cannot remember when I have seen a more attractive box of apples. I am not familiar with this variety. I have never heard of it before. It is of good quality. It is somewhat over ripe at this moment, therefore does not inform me whether it should be graded of the highest quality. The flesh is tender. It is just such an apple as any fruit lover would long to have in his possession. Possibly it may not do as well elsewhere as it does in your locality. It may or may not be a new apple. There are so many varieties of apples in this country it is almost impossible to keep track of them all. Varieties of apples may be grown in certain localities for years and the authorities never receive any information regarding them.

It would indeed be a pity to have this variety disappear when you give up its cultivation, therefore if you will send me a few scions I will gladly see that the variety is perpetuated, unless something unforeseen happens it or me. Scions can be sent most safely by mail in April.

We find there are two other Somerset apples, one from New York state and the other from Maine. Yours may be one of these.

Hardy Nectarines

I SEND you a few specimens of absolutely hardy nectarines that originated on our farm. Last year, 1921, we had a heavy snow storm and freeze when these nectarines were in bloom for the first time, and while all of the other fruit blossoms were killed and we had nothing, the nectarine blossoms set and the trees were loaded. I send these specimens to you because you are a nurseryman who has brought out so many valuable new varieties and I thought you might be interested in it. —Subscriber, Pine Ridge, N. Y.

C. A. Green's Reply: Please accept thanks for your kindness in sending me the two varieties of nectarines. This is a very interesting fruit. It is a pity it is not better known in this section of the country and more largely cultivated. Generally it is found difficult to produce good crops of nectarines. Perhaps some such varieties as yours may lead to more extensive culture.

Fruits on Exhibition

I HAVE just returned from a visit to an exhibition of fruits and other agricultural products at Rochester, N. Y. On viewing the tables and the specimens piled upon them I could not help saying to myself how thankful I should be that I live in a land so productive of the best gifts of nature in the way of wholesome and attractive fruits. My attention was particularly called to the Alexander apples, which were the largest of any on exhibition. They were a beautiful color and would tempt anyone to buy if exposed on the fruit stands. Unfortunately this variety is of poor quality. Why should we plant such varieties when there are plenty of other varieties that are not only beautiful

but delicious in quality? But large things are sought after by the inexperienced. I remember many years ago seeing on exhibition a variety of apple called the Fillbasket. They are almost as large as small pumpkins. I immediately secured scions and began to propagate this variety, but found it so poor in quality I abandoned my efforts. I remember in childhood being attracted to the Twenty Ounce apple, an old variety, beautiful and very large, but this apple is little called for by the planter on account of its lack of flavor and tenderness of flesh and the inherent weakness of the variety to resist disease, therefore bear in mind the fact that size and beauty are not everything.

I happened to pass the committee who had charge of the exhibits just as it was passing upon the Wealthy apple, of which there was a fine display upon the tables. It was granted that the variety was hardy, the trees were productive and the fruit tempting to the eye. The question was how about the Wealthy as a commercial variety. I felt like telling the committee of the man who made a contract with a large department store in this city to supply the store throughout the season with Wealthy apples packed in baskets containing nearly half a bushel. The demands of the store upon this apple grower were so great that he had to travel around different sections of western New York to get supplies for this store which sold no other variety than the Wealthy and had built up quite a trade, which somewhat surprised me for the Wealthy is not an apple of high character but is a profitable apple for the market.

Transplanting Large Fruit Trees

IN REPLY to an inquiry as to the advisability of transplanting large fruit trees when they have been growing for five or six years as fillers, I will say that I would not advise transplanting such large trees of cherry, plum or peach, but under favorable circumstances large apple trees, and possibly pear trees, may be removed, but considerable skill is required in digging the tree and in moving and planting it. The question is would it pay to bother with a bearing tree in this manner, or would it be better to throw the tree away and plant a tree of ordinary size as sold by the nurseries. Unless you have plenty of time and labor I would not advise such a movement of large trees, especially where they had to be carted quite a distance. There are many people who call upon the nurseries for the largest trees they have growing. Generally speaking I do not consider this a wise procedure, but there are occasions where the planter disregards expense desiring quick fruiting. I have known men to be put to an expense of a thousand dollars to save the life of some ornamental specimen. Almost any tree can be transplanted at almost any period of its history, but the expense should be considered and the chance of failure after so much work has been expended.

Caco Grape the Best

MR. E. H. BURSON, superintendent of Green's Nursery Company, reports that he has a high opinion of the Caco grape, a variety which is new to me. He says that it is an early grape, but in addition to this it is luscious eating two weeks before it is fully colored. This makes the Caco a very early variety, and earliness is much to be desired even at Rochester, N. Y. Caco, he says, is the sweetest and best grape grown for the table.

Spokes In Wheel

(Continued from page 13)

will work only in one zone or two. Recently we had a peach box of Delicious apples from Wenatchee which cost \$1.89 postage. There were 13 large apples in the box. Peck baskets can be sent from Michigan to a city like Chicago for about 38c but this means a pretty expensive proposition when figured on the basis of bushels, but it can be used in one or two zones.

The Consumer

The consumer buys from hand to mouth. You only have to visit the chain stores to see him come in and buy a tiny package or a pound or two of some kind of food and go away with it. He knows little about varieties of fruits and their value. He is unsold on fruits except for a very few kinds such as bananas. He looks upon fruit as a luxury on the one hand or a medicine on the other. He has never been brought to look upon fruit as a food. This must be a step which all connected with the fruit industry must take if we are to increase the consumption of certain types of fruit.

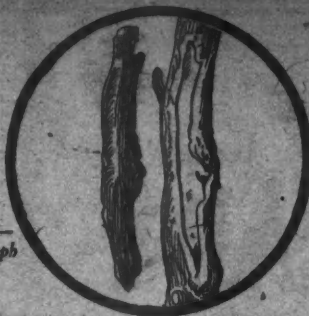
While there is an increasing consumption of organized fruits like the banana, orange and raisin and of the grape because of prohibition, nevertheless, the deciduous fruit business on the whole is not increasing as it should. There is much truth in a statement recently made by Dr. J. W. Lloyd of the University of Illinois, "That the average city consumer feels that fruit is a luxury and he can only afford to buy it freely when the price is so low producers sell it at a loss." Under present marketing conditions we have reached the saturation point with some fruits. Whenever the apple crop passes 25,000,000 bbls. and the peach crop 40,000,000 bu., the producer grows at a loss. This should not be so and by proper marketing much larger amounts can be sold at a profit. We need more advertising such as has been done for the cranberry, orange, raisin, walnut and prune. This advertising has done much to increase the per capita consumption. We need co-operative advertising. We need everyone connected with the trade to advertise just the way the national canners do, the pineapple canners, the way advertising is carried on apple week. Could we get all the people who have anything to do with handling apples and other fruits to advertise, it would increase consumption very materially; through advertising propaganda the consumer must realize that fruit is a food, one which is palatable, nutritious, healthful and economical.

Next we need to encourage the consumer to buy fruit by the package. Buying two or three specimens at a time is extravagant. If he buys a small package he will eat more fruit and this will encourage consumption.

Conclusions

Perhaps no one is making on the whole big profits in the fruit game. Where the trouble seems to be is that there are too many men handling the package before it reaches the consumer. In other words, there are too many spokes in the wheel. Relief will come to a certain extent by consolidating the tonnage, in producing good quality and a heavy yield per acre, meaning the producer can sell at a low price and still make a profit. We should try the community pack, we should consolidate tonnage so that we can get the benefits of wide distribution; develop more carload markets, and avoid over-concentration. We should encourage such movements as chain stores and possibly some can be developed which will handle only fruits and vegetables. We must take up consumer advertising and educate the consumer and the retailer. The retailer must be converted to the idea of a quick turnover and a narrow margin. The consumer must come to look upon fruit as a food and must be encouraged to buy in larger amounts. Gradually the number of people handling the fruit will be reduced. It is going to take patience. These things will not come about rapidly. Improvement will come about only by the great body of producers working hand in hand to bring these reforms.

December, 1922



Canker healing up—
drawn from photograph

Control Blight Cankers by Spraying

Blight cankers are the source from which fire blight, twig blight, collar and root blight are spread; and unless the cankers are healed, the rain and insects will distribute the infection. Vigilance is the price of freedom from the diseases originating in blight cankers. But it is a small price to pay when it can be accomplished by your regular dormant spray—especially in view of the tremendous losses caused by blight. Profs. Orton and Adams in Penn. Bul. No. 136, 1915, said: "The loss from collar blight alone in Pennsylvania is conservatively estimated at 2% annually." In contrast with this loss, at our Virginia orchard, within 25 miles of the Pennsylvania line, we have not lost in 12 years a single tree from collar blight, even though 400 trees were in dying condition from collar blight at the beginning of that period. The only deterrent

was SCALECIDE, "The Complete Dormant Spray." SCALECIDE prevents blighted twigs and water-sprouts from forming holdover cankers, and causes any cankers that are already formed to start healing and cease being a source of infection. And remember that when you have sprayed your trees with SCALECIDE, you have done all that can be done at that particular time by any dormant spray or combination of sprays. Fall spraying with SCALECIDE controls pear psylla and peach leaf curl. Spring application controls aphids, pear thrips, leaf minor, case bearer and leaf roller. Either fall or spring spraying with SCALECIDE controls scale, bud moth, European red mite, fungus or blight cankers from which is spread fire blight, collar rot and root rot. And in addition to controlling these insects and diseases, year after year use of SCALECIDE invigorates the trees.

WE GUARANTEE that, if you will divide an orchard, your worst or best, in two parts equal in general condition, and for three years spray one part with SCALECIDE according to our directions and the other part with lime-sulphur, giving the same summer treatment to both parts, the part sprayed with SCALECIDE will be better than the part sprayed with lime-sulphur—in the judgment of three disinterested fruit growers—or we will refund the money you have paid for the SCALECIDE.

If your dealer doesn't carry SCALECIDE, show him this advertisement—or order direct from us. In any event, write today for the new booklet, "Why SCALECIDE". We will send you also "Spraying the Home Garden", which is considered one of the most helpful treatises extant on the control of insects and diseases that attack trees, shrubs, vines, flowers and vegetables. Address Dept. 11

B. G. PRATT CO.

50 Church Street

NEW YORK CITY

SCALECIDE

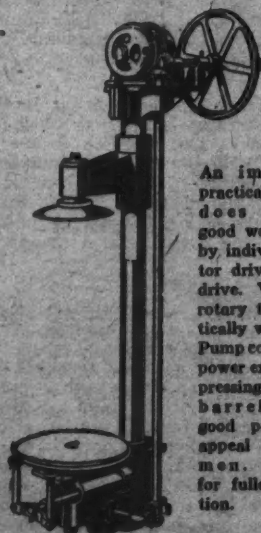
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THE COMPLETE DORMANT SPRAY

B.G. Pratt
Co.

30 VARIETIES STRAWBERRY PLANTS
\$4.00, 1,000 up. Also overbearing Strawberry, Raspberry, Blackberry, Dewberry, Currant, Gooseberry, Grape, Asparagus, Rhubarb plants. Prices reasonable. Catalog. KIGER'S NURSERY, Sawyer, Mich.

SKINNER HYDRAULIC Barrel Heading Press



An improved, practical press that does unusually good work. Run by individual motor drive, or belt drive. Valves are rotary type, practically wear-proof. Pump consumes no power except when pressing head into barrel. Other good points that appeal to busy men. Write us for fuller description.

SKINNER MACHINERY CO.
FIFTH STREET, DUNEDIN, FLORIDA

Get Jim Brown's new FACTORY PRICES

Write guide for my big new book of factory prices on high quality Fence, Gates, Posts, Rodding, and Paint. **FREE!** Don't pay a penny more than Jim Brown's factory prices. Lowest quality, backed by guarantee. Write for 100-page money-saving factory book. Brown Fence & Wire Co., Dept. 100, Cleveland, O.

BIG FACTORY SALE 38¢
FAMOUS OTTAWA ENGINES
Other sizes, 2 1/2 to 25 H.P.
Direct from factory, lowest prices, improved models, built to be dependable work. Get big offer now, before this ends. Write for **FREE** Book! OTTAWA ENGINES CO., 1171-P King St., Ottawa, Kansas, Pennsylvania, Pa.

BOYCE SPRAY GUN

Just what you have been looking for. The only double nozzle Spray Gun possessing both short and long range. Adaptable for any power spraying, with a capacity of seven gallons per minute and upwards.

One man can handle full capacity of any spray rig with best possible results, saving time and material, and this saves money.

Tested and approved by leading Fruit Growers in all fruit States. Hundreds of voluntary testimonials. \$15.00 delivered to all parts of U. S. Parcel Post or Express C. O. D. Satisfaction Guaranteed or money refunded.

WM. E. BOYCE • Albion, N. Y.

This is the fourth of a series of advertisements on the making of better orchards. Reprints of the first three: "The Advantages of Fall Spraying", "Fall Spraying Best for San Jose Scale" and "Now Is Best Time To Control Pear Psylla"—will be sent to you upon request. The fifth, discussing Tree Invigoration, will appear next month.

Why our trees PLEASE

They are well-grown, have good root systems and well-shaped tops. They are free from insects, like aphids and scale. They are free from diseases like crown-gall and hairy root. They are fully matured and dormant before they are dug. They are carefully handled when dug which preserves their vitality. They are carefully graded or sorted. They are true-to-name. They are packed carefully by experienced men.

Our two-year apple have tops and roots that have grown two seasons in our nursery. The tops are headed 11 to 24 inches from the ground. A low headed tree can be trained to a high headed orchard tree but you cannot easily make a low headed orchard tree out of a high headed nursery tree.

Our one-year apple have roots that have grown two seasons and the tops one season in our nursery. The same is true with our peach, plum, cherry and apricot. Our land, nearly 800 acres, is in the Ozarks over a thousand feet above sea level. Our stock pleases particular people in every state. We also have pleased customers in Mexico, England and other foreign countries. Write for New Catalogue—free. It's different from the usual nursery catalogue.

"In itself it is a real service to the prospective orchardist, and in fact to anyone who has occasion to grow trees."

Yours-for growing satisfaction
NURSERIES - CO
NEOSHO 121 BIRD ST.
NEOSHO, MO.

Give EVEREADY FLASHLIGHTS *this Christmas!*

Eveready Spotlight
with the
300-ft. Range



Eveready Flashlights
cost from \$1.35 up to
\$4.00 complete

What's finer than an Eveready Flashlight for Christmas! The gift to be cherished and used a dozen times a day or night the year round.

Your friends one and all need Eveready Flashlights from sun-down to sunup, to light the way in the woodshed, cellar, garret; out to the garage, barn, everywhere.

Protects property and life against fires caused by matches, candles, and oil lanterns. Eveready Flashlights are flameless — cannot set fire to anything.

[Eveready Flashlight Batteries fit and improve all makes of flashlights; they give a brighter light; they last longer.]

For sale everywhere at hardware, electrical, sporting goods, drug, and auto accessory shops; garages; general stores.

EVEREADY FLASHLIGHTS & BATTERIES

Ford Sedan Given

We have given away nearly 40 Autos in the past. Now we will give away a new latest model Ford Sedan complete with electric lights and starter, sliding plate glass windows, large tires, comfortable seats, freight and tax paid. This is the final one for both summer and winter use. Own a car of your own. Can you make out the two words spelled by the numbers in the plot? We will give the car to the person who can. What are the two words? One you work it out. Send us money with your money. And the two words are Ford and Sedan. Send money to Ford Motor Company, 141 W. Ohio St., Dept. 1000, Chicago, Ill.



YOU CAN WIN THIS
IDEAL ALL-YEAR CAR
Can you solve this puzzle? Try
it now and your answer today.
Surely you want this fine new
latest model Ford Sedan.



WITH THE CO-OPS.

A ARON Sapiro on October 25 gave a delightful little dinner at the Drake Hotel, Chicago, in honor of H. G. Coykendall, Manager of the Prune & Apricot Growers of California. About thirty-five partook of the dinner, most of them being representative men in the co-operative movement of the country. The dinner was informal and purely social in its character and gave many the opportunity to become well acquainted. Mr. Coykendall is considered to be one of the most successful of co-operative managers in the United States.

REPRESENTATIVES of all of the co-operatives of the United States are being invited to meet in Washington, D. C. about the middle of December to consider the question of rural credits. The idea for this meeting was suggested by Senator Arthur Capper. He wrote to Aaron Sapiro, well known leader and counsel for co-operatives, suggesting that a national meeting be called. Mr. Sapiro was hearty in accord with this and appointed an Inter-Co-operative Conference Committee to issue a formal invitation and to work up a program. The committee appointed is as follows: Judge Robert W. Bingham, The Tobacco Co-operatives, Louisville, Ky.; Carl Williams, President American Cotton Growers' Exchange, Oklahoma City, Okla.; B. W. Kilgore, Director of Extension, Raleigh, N. C.; George W. Jewett, Manager Northwest Wheat Growers' Association, Portland, Ore.; Charles C. Teague, California Fruit Growers' Exchange, Los Angeles, Calif.; Aaron Sapiro, New York City; Clifford V. Gregory, Editor, "Prairie Farmer," Chicago, Ill.; Howard Leonard, President Illinois Agricultural Assn., Chicago, Ill.; Milo C. Campbell, President National Milk Producers Assn., Coldwater, Mich.; H. G. Coykendall, Manager Prune & Apricot Growers, San Jose, Calif.; C. O. Moser, Secretary American Cotton Growers' Exchange, Dallas, Texas; Charles M. Morgan, American Cotton Growers' Exchange, Dallas, Texas.

A meeting was held at Louisville recently and a permanent committee organized. In addition to those above mentioned the following two will serve on the permanent committee: Hon. Manning Dougherty, Minister of Agriculture, Toronto, Canada and J. H. Barber, Manager Central California Poultry Producers, San Francisco, Calif.

Headquarters have been opened in Room 122 of the New Willard Hotel, Washington, D. C. The first annual convention will be held December 14th, 15th and 16th, in Washington.

THE co-operative movement in the United States is growing by leaps and bounds. The present co-operatives are becoming stronger and new ones are springing up each day. More than \$900,000,000.00 worth of farm products are now being marketed annually in this country on a co-operative basis.

A S A member of a co-operative organization you should ask yourself, "What am I taking from the association and what am I giving to my association?" You are taking much from your association. You are gaining the great benefit of united effort on the part of many growers, which means the consolidation of large tonnage with its many beneficial results, such as wider distribution, development of more carload markets, an advertising campaign that increases per capita consumption, the building up of a stable selling machine—all which

contribute to stabilize your industry, make your farm worth more and make it an asset which has a real market value. You are also taking from your association the best mental efforts of a group of able men—your managers and directors. The work is hard. Co-operative managers die young. G. Harold Powell died in the prime of life. A successful manager is one who is willing to sacrifice for his association, and practically invariably he does give time and energy which perhaps no one has a right to expect.

What are you giving to your association? There is only one thing that you can give that is worth anything and that one thing is worth more than any amount of money. We refer to your whole-hearted support, nothing else. Criticism is dangerous. Too often it is destructive and rarely constructive. If you have criticisms to make, don't shout them on a street corner, don't give them to your fellow members, and, above all, to the men outside your association, but write to your manager or directors, or better, see them personally.

You are taking much from your co-operative. Give them your whole-hearted support. One hundred percent is what they need to build up both the association and your business.

With the Co-Ops

THE Federated Fruit and Vegetable Growers, Inc. completed their permanent organization in New York on October 21. The officers elected to serve until the first annual meeting are as follows: President, J. S. Edwards, of California; First Vice-President, E. P. Porcher, of Florida; Second Vice-President, W. B. Armstrong, of Washington; Secretary, C. E. Durst, of Illinois; Treasurer, Alexander M. White, of New Jersey.

An Executive Committee was elected, the personnel of which is as follows: E. P. Porcher, of Florida; N. R. Peet, of New York; C. E. Durst, of Illinois; H. W. Jeffers, of New Jersey; J. S. Edwards, of California.

Mr. J. S. Edwards, President, will devote all his time to the new organization between now and January 1st.

Applications for membership are pouring in. The first applicant was the South Haven Fruit Exchange, South Haven, Mich., which ships from 600 to 800 cars of fruit a year. It is one of the best established and oldest associations in the state.

THE Hood River Apple Growers Association has a special free employment agency, which does very effective work. This year alone more than 2,000 harvest hands were secured for local growers throughout the Valley.

BERRY growers belonging to the Puyallup Valley Fruit Growers Association did very nicely indeed this year considering general marketing conditions. On fresh fruits the following figures were received: Raspberries \$2.18; loganberries \$2.03; red currants \$1.63; black currants \$1.86; black raspberries \$3.04 a crate. The loganberries which were sold to the canners brought 7c a pound; gooseberries 6½c; Royal Anne cherries 7½c; sweet cherries 6c and sour cherries 8c a pound.

FLORIDA banana growers have formed a banana growers' association. There is considerable interest being shown in this fruit as the Association increased over 50 per cent membership for the past year. It is predicted that Florida will soon produce a heavy tonnage of bananas. W. E. Bolles of Oldsmar is Secretary.

Rambles of a Horticulturist

(Continued from page 5)

The Seckel is also grown quite extensively, with a small scattering of other varieties such as Duchess, Flemish Beauty, Anjou and others too numerous to mention.

The only peach grown commercially in western New York is the Elberta. Years ago many varieties were grown but they were generally found unprofitable. The Elberta being a standard market peach and a good shipper, it was found it paid to concentrate on this variety. The one disadvantage of this program, however, is that there is too heavy a tonnage of peaches all at once and this was nicely demonstrated this year when the peaches ripened during the very hot weather in early September and it was physically impossible to get a sufficient number of cars to move the tonnage and as a result, quite a large percentage of them fell to the ground and rotted. Were the district able to use several varieties and extend their season they might avoid some of this congestion. These varieties would have to be selected, however, with extreme care and a careful study made of the relationship of their production to the production of these same varieties in other districts of the United States.

Where one cares to grow young orchards in western New York, there are some very profitable inter crops, such as cabbage, potatoes, beans, etc. These can all be grown successfully and will bring in a splendid revenue while the orchards are still young.

Community Packing House

A new development which is taking place in western New York during the past three years is the coming of the community packing house, and it looks as though the community packing house would have the same influence on orcharding in general in western New York as it has had in other districts, viz., it will be better packing, better grading, better inspection and better growing, which means better horticulture for the district. Packing is much better in a community house. There is less congestion and there is more rapid handling. The labor is apt to be of a higher grade as one prefers to work in a house where there is a long season of operation. Better packing is brought about also because these houses can be much better equipped. Of the forty community packing houses, many of which I have visited, I found that they were all good, substantial houses, some had been rented, others were newly built, but practically all were equipped with grading and sizing machines for peaches, pears and apples. A few of them as yet have gravity carriers and other labor saving devices but these will come in time and will cheapen the packing, will facilitate handling, and will mean the turning out of a better tonnage.

It is much easier to grade and inspect in a community packing plant. In several houses that I visited, committees of the growers were present inspecting the grading and when a grower sees his apples go into the grader and sees that he has a large percentage of culls, he shakes his head and concludes that such business does not pay and he determines that another year he will grow a better grade of fruit.

The average community packing house is a much better building than the private house can be in a district like western New York where the orchards are relatively small.

The Western New York Cooperative Packing Association had a big influence in bringing into New York the idea of the community packing house and they are assuring the fruit growers in the district of the great benefits of this system. It is going to mean a great deal to western New York in years to come.

Any fruit grower who has the opportunity should visit this fine apple producing center.



For Earlier Yield and Quality Fruit

SIX REASONS for blasting tree-holes with Dumorite:

- 1-The soil is thoroughly loosened and easily removed for setting the tree;
- 2-The side walls of the hole are cracked to permit the fibrous roots to branch out;
- 3-The feeding ground is enlarged in area;
- 4-The soil absorbs moisture readily and it is stored for future needs;
- 5-The growing tree is being thoroughly nourished because its roots are free to grow naturally;
- 6-The tree matures earlier—the marketing time comes sooner and so do your profits!

BRANCH OFFICES:

Birmingham, Ala.
Boston, Mass.
Buffalo, N. Y.
Chicago, Ill.
Denver, Colo.
Duluth, Minn.
Huntington, W. Va.
Kansas City, Mo.
New York, N. Y.
Pittsburgh, Pa.
Portland, Ore.
San Francisco, Calif.
Scranton, Pa.
Seattle, Wash.
Spokane, Wash.
Springfield, Ill.
St. Louis, Mo.

E. I. DU PONT DE NEMOURS & CO., INC.
Explosives Department, WILMINGTON, DELAWARE

NON-HEADACHE

DU PONT

NON-FREEZING

DUMORITE

Two Great Peaches

Belle of Georgia is everywhere recognized as the best all-around white peach; Elberta has long been the standard main-crop yellow peach. An orchard combining these two great varieties will enable you to capture the best market.

Buy your Belle of Georgia and Elberta Trees direct from Harrison's Nurseries and make sure of superior quality. These trees are as fine as we have ever grown.

Write today for special Price List of Fruit and Ornamental HARRISON'S NURSERIES, Box 100, Berlin, Maryland
"Largest Growers of Fruit Trees in the World"



BASKETS For High Grade Apples

Basket packed apples are commanding a premium on every market. The dealer prefers them, the consumer prefers them and, once you try the PaSaCo kind, you will prefer them too. Don't get the idea that all bushel baskets are alike. PaSaCo Bushel Baskets are built stronger, of heavier selected veneers. Straight sides and 15-inch bottoms make them ideal for storage as well as shipping. Begin now to get a line on your requirements for 1923. Experience shows that by buying early you can save from 10 to 25 per cent.

WRITE FOR FREE BOOK

PACKAGE SALES CORPORATION

212 Union Trust Building

SOUTH BEND, INDIANA

—what 2 cents will do

Hall's Nicotine Sulphate when diluted with water according to directions makes a powerful spray that costs only two cents per gallon.

Take advantage of this economy. It may mean the difference between a bumper crop and an orchard full of culls and dwarfs.

Nicotine is the most effective known poison against soft-bodied, sucking insects. And Hall's Nicotine Sulphate is guaranteed to contain 40% pure nicotine. It is made under scientific processes which secure an even composition and absolute purity.

Being a vegetable poison it will not harm fruit or foliage.

Ten-pound tins, \$13.50; two-pound tins, \$3.50; half-pound tins, \$1.25.

Buy from your dealer. If he cannot supply you, order from us direct.



Hall's Tobacco Dust

Very effective where dusting is preferable to spraying.

Finely ground and guaranteed to contain a full 1% nicotine.

100-pound sacks \$4.50
2-pound drums .35

HALL'S

NICOTINE INSECTICIDES

HALL TOBACCO CHEMICAL CO.
3947 Park Ave., St. Louis, Mo.



KITSELMAN FENCE

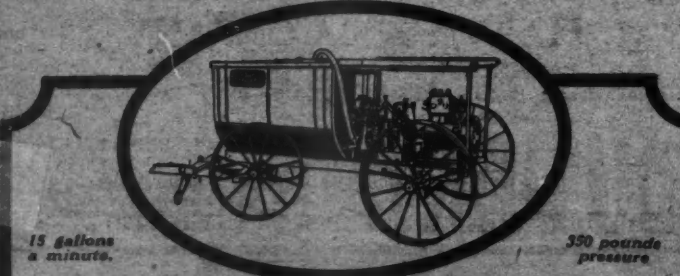
GET IT FROM THE FACTORY DIRECT
"I saved \$20 to \$22," writes B. C. Bradley, Buchanan, Ga. You, too, can save by buying direct at Lowest Factory Prices. WE PAY THE FREIGHT. Write today for Free 100-page Catalog of Fences, Fencing and Lawn Mowers, Gates, Posts and Barbed Wire. KITSELMAN FENCE, Dept. 506 BUNNELL, ILL.

Edeson Radio Phones

Adjustable Diaphragm Clearance

We guarantee satisfaction, or your money refunded. The adjustment feature places our phones as a par with the world's greatest radios. Our extra plus diaphragm, double the price and twice the life, makes our phones the best in the world. Better phones cannot be made. Immediate delivery. Double 300 Ohm set, \$1.99. Other single set, \$1.50. Complete line.

Edeson Phone Co. 68 South St. Dept. 44 Boston, Mass.



15 gallons a minute.

350 pounds pressure

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Big enough for the largest acreage—strong enough for the highest pressure—light enough for the steepest hillsides—meets the demands of the biggest growers—handles as easily as the smaller outfits—turns in a 20 foot circle. Measured by any standard, the greatest sprayer value ever offered.

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MARKETS AND MARKETING

APPLE growers on the Pacific Coast are welcoming a lower freight rate from Seattle and Portland to Europe, the rate being reduced from \$1.00 to 90c. Such districts as Yakima have a rate of 14 1/2 c to sea-board. Dockage is 2c, making a total of \$1.06 1/2 against \$1.15 by rail. Yakima alone expects to save \$37,000.00 by this reduction.

Hood River with a water rate to Portland can now export apples for 99c. The export business from both Seattle and Portland is increasing very rapidly.

Great Britain is the largest buyer of apples which are exported from the United States, according to figures published by the Department of Agriculture. About 65% of the exported apples go to England. The following table gives the total exports of apples from the United States for the past ten years and the quantities shipped to the United Kingdom:

Year	Total Bbls.	To the United Kingdom Bbls.
1912	1,456,381	994,551
1913	2,150,132	1,318,424
1914	1,606,569	827,028
1915	2,351,504	1,747,336
1916	1,466,321	874,587
1917	1,739,997	1,147,412
1918	579,918	125,987
1919	1,712,367	1,209,855
1920	1,797,711	1,280,033
1921	1,936,224	1,498,833
1922 (Jan.-June)	524,404	366,534

THE Florida Citrus Exchange reports that up to November 1st 3,000 cars of oranges and grapefruit have been shipped from Florida. The car shortage is being felt very materially and shippers are unable to secure a sufficient number of refrigerator cars and some fruit has been shipped in ventilated box cars. Heavy rains throughout October have had a serious effect upon the crop. They have retarded the coloring and maturity and have also impaired the carrying and keeping qualities of both oranges and grapefruit. The climatic conditions, however, are such that the fruit is going to be of large size. Reports from the United States Department of Agriculture indicate that the crop this year will be about 15,000,000 boxes, an increase of about 3,000,000 boxes over last year's crop.

The California crop shows an increase of about 25% over early estimates and it now appears that about 35,000 cars of oranges and 9,000 cars of lemons will roll. Last year 41,279 cars of oranges and 11,567 cars of lemons were shipped from this state.

The Satsuma crop from Alabama is very good. The quality is fine and there will be four or five hundred cars shipped from that state.

Arizona expects to handle about 200 cars of oranges this year.

THE prune situation on the whole is the best it has been for a number of years. The California Prune Association is very optimistic and thinks the entire tonnage will be sold in the relatively near future. The Oregon Growers Cooperative Association, the largest handlers in the Pacific Northwest, has had a little trouble in delivering on account of the very small percentage of 30-40's. Owing to the peculiar weather conditions just before harvesting, the size of the prune was kept from developing as much as had been expected. About 90% of the crop of the Northwest will be 40's, 50's and 60's. There is only 1 1/2% 30-40's, about 25 1/2% 40-50's and about 35% 50-60's. The trade on the whole, however, is showing the right spirit with regards to deliveries and will take their pro rata of the large sizes. The prune grow-

ers of the Pacific Coast should be very optimistic because everything now points to a clean-up of this year's crop, due to the very careful, energetic work of two large associations.

MARKETING development in the past three or four years has shown that more and more attention must be given to the marketing of farm products. Mr. George Livingston, who was former Chief of the United States Bureau of Markets, has seen the great need for more training in markets and marketing and has established a school known as the "American Institute of Agriculture." This will be directly under Mr. Livingston's personal direction and he has to help him some 100 of the best known marketing authorities in the United States. Six complete courses are offered in the marketing of agricultural products. The headquarters of this school are in Chicago.

THE pear crop, according to the latest government figures, was 17,722,000 bushels. California led the Union with a production of 5,000,000 bushels, New York State being second with 2,800,000; Washington third, with 1,760,000; Oregon fourth, with 935,000; Michigan fifth, with 672,000 bushels. The following states had in the neighborhood of half a million bushels each: New Jersey, Pennsylvania, Ohio, Missouri and Illinois. The crop last year was about 10,706,000 bushels.

THE apple market has not shown a great deal of change this last month. One of the features of the past month, however, has been the car shortage, which has been getting worse and worse, with the result that growers who are a long way from the market, such as the Pacific Northwest, have suffered a great deal of distress. Apples have ripened unusually fast this fall and it has been necessary to repack some fruit because of car shortage. Movements of all kinds of fruits have been slowed down by the lack of cars. While many apple growers made a good start, getting about 80% of their apples sold by harvest, it looks as though it will be difficult, however, to get a 60% consumption by January 1st, which is essential if the later market is to be kept at the best condition. Some fruit, however, will deteriorate so very much that it cannot be shipped at all.

The one great lesson for apple growers to learn all over the United States from the marketing experience during the past four or five years, especially this year, is that we must have more cold storage. This cold storage must be built in three or four places; first, at point of origin, second at transit point or points of diversion, and third, at points of consumption. There is nowhere near enough cold storage in the country at this time.

The latest government figures are now 31,901,000 barrels, which is a slight increase over the estimate for October. The crop last year commercially was 20,098,000.

It is rather unfortunate that total crop figures amounting to between 250 and 300 million bushels are sometimes published. The commercial crop is all we are interested in and this commercial crop should be further divided according to seasons, such as summer apples, fall and early winter varieties and late keepers. An analysis of this kind would be worth something to both the producer and the handler.

Insects May Attack Stored Apples

Late Summer Pests Sometimes Put in Storage

WITH more attention being paid to the grading of apples in New York State, anything which contributes to the deterioration of the fruit after packing or in storage will be of considerable interest to fruit growers. Observations made at the Experiment Station at Geneva and elsewhere show that late summer insects sometimes escape the notice of the packer and are put in storage, where later they may develop and do much damage to the fruit.

Principal Offenders

The larvae or worm form of leaf-rollers, bud moth, and case-bearers have been found feeding on apples piled in the orchard; while codling-moth larvae, the lesser apple worm, San Jose scale, and apple maggots are known to have continued their feeding and development in supposedly sound fruit which had been placed in storage. Fortunately, the codling moth and apple maggot confine their efforts to a single infested fruit, but the apple worm and San Jose scale may pass from apple to apple.

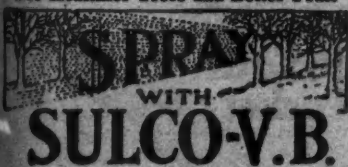
Low Temperatures Check Development

If the fruit can be placed in cold storage and held at just above the freezing point until ready for use, little if any injury will result from insects inadvertently carried over with the apples. Altho the larvae may not be killed, the low temperature will effectively check their growth. However, infested apples never keep quite so well in storage as do sound apples.

Swiss Cider Presses Working Night

A **N**ORMOUS fruit crops this year in Switzerland threaten to bring about a revolution in the old methods of handling and disposing of fruit, says another report from Consul Willrich. The markets in the different cities are flooded beyond precedent with apples, pears, grapes and prunes. The orchardists do not know how to cope with the magnitude of their harvest. Owing to peculiar conditions existing on the continent, Switzerland is not able to export fruit in quantities, and the cider presses are working day and night to absorb some of the supply. In view of the present circumstances, new methods must be found and adopted to prevent in subsequent years the great waste and loss to the Swiss fruit growers which will be unavoidable this year.

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A Practical Reminder for Everyday Farmers

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This policy could well be carried a step further. Profitable, economical farming is so largely a matter of modern, improved machines that every good farmer should keep posted also on the equipment on the market so that when occasion arises he may invest to the very best advantage by the purchase of new machines.

We are therefore printing here for your information the list of standard, reliable, most popular farm equipment—

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Broadcast Spreaders
Tractor Plows
Walking Plows
Riding Plows
Disk Harrows

Spring-Tooth Harrows
Peg-Tooth Harrows
Tractor Harrows
One-Horse Cultivators
Cult-Packers
Kerosene Engines
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The Long-Life Battery For Your Car

Oberammergau

(Continued from page 12)

I almost hope they may accept this offer. They certainly deserve the money. I would advise anyone who has not seen the play itself, to go to that picture. It will lack the color and the sound, the breezes and sunshine that made it all so real, but it will be worth the price of admission be it many, many times what was paid to see the original.

Perhaps it will not be so exhausting to witness. After being keyed up to a high emotional pitch for a whole long day, we felt the reaction. Time was short. After the last performance, we raced for our train, sprang on the car and (such is the frailty of poor humanity) after so many hours of spiritual exaltation, we grabbed huge ham sandwiches and coffee without a moment's delay or any particularly christian consideration as to whether there would be enough to go round. I would have felt more proper shame had not the whole list of fellow travelers been similarly ravenously occupied.

Avocado Industry

(Continued from page 4)

may proceed with assurance of success.

California Avocado Association

From the beginning the industry has been under the fostering care of the Avocado Association which for fine public spirit, intelligent foresight and genuine cooperative effort takes a high place among agricultural organizations. The association tests all new varieties not only as to food value and quality of fruit, but as to bearing habits as well. The recommendations of the committee on varieties have great weight. The association is very active in securing research work along many lines from both federal and state authorities with which it cooperates. Such work includes chemical analysis of fruit, maturity tests, bud selection studies, a survey of all avocado regions and the introduction of many improved sorts, by-product studies, vitamine studies, cold storage tests, quarantine regulations, and many other lines of work.

The crop of the associated members is marketed cooperatively through the American Fruit Growers. Public meetings, interesting exhibits of fruit and social affairs are held semi-annually and are largely attended. A determined fight is kept up against crooked speculators who sometimes try to unload poor land and worthless trees on gullible or simple minded investors. The association maintains a continual campaign of education which has broadcasted useful and reliable information and stimulated interest. In fact the writer is not aware of any new fruit industry which has been developed from the beginning as sanely and intelligently as the California avocado industry. It is well started on its way to accomplishments which will soon command the attention of the country.

S. A. Beach

ON NOVEMBER 2nd Professor S. A. Beach, Chief in Horticulture at the Iowa Agricultural College, Ames, Iowa, passed into the Great Beyond. His loss is going to be keenly felt, especially when we stop to think that in the past three years American horticulture has lost such men as G. Harold Powell, Doctor J. C. Whitten and Professor S. A. Beach—three men who were considered national leaders.

Professor Beach attracted great attention while at the New York Experiment Station at Geneva when he published two volumes known as the "Apples of New York," which were the forerunners of a splendid series of books from that experiment station. He is recognized as a teacher and experimenter of unusual ability and as a man he was greatly loved by all who came to know him. Professor Beach will be greatly missed but his work will live on for many years to come.

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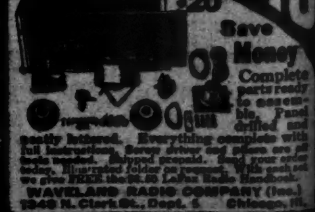


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The Orchard Home

A Section for All Members of the Family

Edited By MARY LEE ADAMS

Organized Life Saving

HEALTH is essential to happiness, yet a knowledge of the rules of health and of simple facts as to hygiene and sanitation are sadly lacking in our rural communities. It came to us as a profoundly shocking surprise some years ago, when it was shown that we country people did not measure up in physical efficiency to the city people.

How could that be? we asked. Had we not advantages of pure air, fresh food and plenty of it, out-door exercise and many other things that make for health? What lay behind the indisputable but apparently inexplicable result of the comparison of city folk with country folk? The answer was—Organized application of the rules of health, hygiene and sanitation.

Every city has its board of health. Not so the country. City dwellers are protected and cared for officially. Flies are exterminated; water supplies guarded from impurities. Milk is the subject of tender almost fearful solicitude. Contagions are stamped out.

Appropriations are entirely inadequate for such things in rural communities. Every farm homestead must be headquarters for information as to what constitutes a healthful mode of life. But how to get the necessary knowledge? Information on the care of infants and children should be at least as available as instruction on the boll weevil, apple scab or hog cholera.

But it is not. The demand for it has not been so great. Unfeeling as this seems, it does not mean that we prefer pigs to people, but that we have not realized the importance of knowing the laws of health. It was a sort of sacred tradition that women, however ignorant and inexperienced, were transformed by the first touch of motherhood into all-wise infant care-takers.

No such miracle happens, as is testified by the hundreds of thousands of unnecessary infant deaths. The young wife needs help and instruction in the care of her babies. The young husband should know the principles of hygiene and sanitation. Both should appreciate the importance of proper diet for old and young.

We need a strong Department of Public Health, not a mere Bureau as at present. We have Departments of Agriculture, of Labor, even Departments of War and of the Navy to destroy life. Why not a fully organized and complete Department to save life?

Lessons in Investment

THE University of Columbia, New York City, takes a practical step in conducting a course on the principles of investment. The University realizes that there are many inexperienced persons, more especially women, who would be substantially helped by such lessons.

Though more women today have some understanding of stocks and bonds, securities, etc., than was the case formerly, yet it is still true that too many women, left without the guidance to which they have

been accustomed, feel distressingly puzzled and uncertain when thrown upon their own resources and called upon to decide how they shall invest their money.

In spite of the fact that the men to whom women were used to confide the care of their money, undoubtedly knew better than they what was a good thing or a safe risk, the pathway of many widows and other unprotected women was strewn with the wrecks of their fortunes. Often the investor was well-intentioned, occasionally he lost his own fortune as well. When he did he had no one but himself to blame, while the poor women felt that ruin had come upon her through no fault of her own.

"If you want a thing well done do it yourself." That does not mean that you are necessarily more capable of doing that particular thing than anyone upon whom you might call, but that the thing being your own particular interest, you will naturally give it closer and keener attention than another would.

For this reason the study of investments is to be recommended to all women. When they are in doubt, consultation with their local banker is one of the surest ways to keep out of trouble and to keep their money out of fake stocks and bonds or other unwise investments.

A Voice From Heaven

IF YOU happen to be a divorced husband in this world, read about the psycholustrometer and see what may happen to you in the next. You've heard of course, of the wonderful psycholustrometer. No? Neither had I a few short weeks ago. Then, when I did hear, I thought it was some sort of prehistoric cousin of the Pterodactyl, that huge old reptilian bird that flapped about the primeval marsh before there were any women to squeal at the sight of bats.

What a gross error! Instead of being prehistoric, the psycholustrometer is the newest of the new, a kind of wireless between this world, and the next. Its inventor, Oliver Bland, is a scientist and author. Through the psycholustrometer, he tells us, he chats freely with those who have entered the "other plane" or the "fourth dimension."

What does he talk about? Some of it is plain tea-table gossip to judge by what we read of his conversations with men who have crossed the great divide and "have met their earth divorced wives on terms of every day society." They tell him that it's easy to renew the old relations of their early married happiness.

Some may feel that this adds a new terror to death. Others, who regret their mistakes, may gain a new hope therefrom. Most of us are not quite ready to accept the dictum of the psycholustrometer yet awhile. But in the face of recent astounding developments in electrical science, it would be a rash individual who would risk giving the Ha-ha direct to any claim made by a scientist, however far-fetched it may seem.

Would We Live Longer?

THE extension of the span of human life is a goal toward which medical science is straining, and great applause greets each and every advance in this direction. Sometimes a doubt occurs as to whether the attainment of this end would be an unmixed good, and where it would stop.

Hardly anyone would deny that to prolong the average life of humanity by saving more and more babies from death in infancy, is good in every way. Yet when we come to the prolongation of individual lives beyond the present span, we hesitate. The few examples of centenarians are not such as to make the rest of us envy them.

We say and believe, that if we could keep our faculties unimpaired, we'd be glad to keep on living indefinitely. But unless all whom we loved kept on living with us, it would become desperately lonely at last. And then too, even the middle-aged have trouble enough in adapting themselves to what we call "the times." The old order constantly changes. Would those of us who entered a second century serve to advance or retard progress, even if we were strong in body and mind?

Such considerations leave us cold under the most glowing predictions of rejuvenation through the grafting of monkey glands or other agency. Yet, if we had firm faith in the success of the process, quite a percentage of us would batter at the gates of youth and ask for "grafts."

East Is East and West Is West

WHEN Kipling wrote those words, he added "and never the twain shall meet." But the movies have changed all that. Meet Nua Nua, South Sea beauty from Tahiti. Nua Nua is beautiful even by our standards, if photographs are to be relied on. There's foreign enchantment in her large eyes, but the face is delicate, appealing and, while not at all American, it might well be termed modern.

No particular interest would attach to the mere fact that one more girl, however fascinating, is to be shown on the silver sheet, but as the first of her race to become a movie actress, Nua Nua becomes symbolic. She is one more slender filament in the fine web that slowly but surely is woven to every nook and corner of the globe, uniting far away places and peoples in a contact undreamed of before.

Want

Edgar A. Guest

It's wanting keeps us young and fit

It's wanting something just ahead

And striving hard to come to it

That brightens every road we tread.

A man must want from day to day,

Must want to reach a distant goal

Or claim some treasure far away,

For want's the builder of the soul.

Want is the spur that drives us on,

And oft its praises should be sung

For man is old when want is gone,

It's what we want that keeps us young.

GULBRANSEN

The Player-Piano

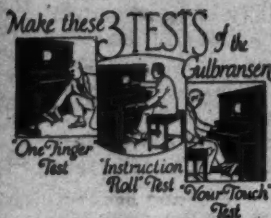


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what an inspiration it is—what a means of enjoyment—they then appreciate the value of Gulbransen ideals, Gulbransen craftsmanship and Gulbransen policies.

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Chats with Fruit Grower's Wife

By Hazel Bursell

Don't Wear a Shabby Hat —Renovate It

PERHAPS your winter hat is showing wear because the family budget could not be stretched to allow for a new one?

If so a few simple methods of renovating properly applied will accomplish wonders. Possibly a cleaning, or cleaning and new trimmings is all that the hat needs to make it "like new."

Velvets May be "Panned"

Velvet can be steamed and brushed to renew it. Old velvets may be "panned"—dampened and pressed on the right side with long strokes in the same direction. If it is much faded the material can be shirred and used as trimming.

Small-brimmed felt hats are very popular this season. If you have one with a large brim, you can cut it down by marking the desired shape in chalk, and stitching around the line with a short stitch on the machine. By bending back and forth the extra felt will come off, leaving the soft edge desired in this type of hat.

White felt hats may be cleaned by rubbing them with French chalk and brushing. All felt hats may be improved by rubbing with sandpaper.

Curl Feathers Over Knife

Feathers, as most of us have found from experience, will not keep their shape in damp weather. But they may be made flexible by holding over a hot stove and then curled by drawing the flues over the dull edge of a silver knife.

To clean light colored feathers, rinse in gasoline, then draw through the fingers until almost dry and finally roll in cornstarch and shake well. Dark feathers may be cleaned in wood alcohol and shaken dry. Another method is to dip them up and down in a solution of ivory soap and water, and dry between white cloths.

Spots may be removed from velvets and plushes by rubbing with chloroform. This will also restore color to faded materials.

Bran Cleans Dark Furs

Fine bran rubbed into dark furs and shaken out again will bring much of the dirt out with it. Light colored furs may be rubbed with alcohol or gasoline and then combed with a coarse stiff comb. Colored flowers and leaves may be retinted with water colors. The curling iron may be used to freshen bows on hats—dampen the ribbons and then steam them with the hot iron.

Suggestions For the Care of Linens

A friend who has lovely linens gave me these suggestions for their care, and I am passing them on to you. Most of us will have some additional pieces along about December 25, so let's start right out treating them right so that they get more and more beautiful with each passing year.

Iron Linens on Wrong Side

Use little or no starch—linen doesn't need it. Take them out and use them quite frequently as the laundering does them good. Iron the pieces on the wrong side on a Turkish towel. Never touch the right side with the iron. Have the linen rather damp for ironing. Always iron with the threads of the material, not on the bias, and pieces will keep their shape and will not curl on the edges.

Scalloped doilies and centerpieces will naturally fray some at the edges for the first few launderings, but do not be discouraged. Just trim them off and after a time they will not bother any more.

Good linens given the proper care should be an heirloom for several generations.

How to Lay the Dining Table

THE correct way of laying the dining table is a problem with many housewives, and yet when once understood it is a very simple matter. No one other thing has, however, greater power to make or mar the success of the dinner party, be it ever so informal. Save these rules and then you will know just how to do it next time.

1. Place the table pad or silencer on the table smoothly.

2. Lay the tablecloth smooth and straight with the center fold up and exactly in the center of the table. The position of the center fold should be changed occasionally in laundering to save the wear all coming in one place.

3. Arrange the centerpiece. A doily embroidered in white serves as a good foundation. The center decoration must be either high or low so as not to obstruct the view across the table. If low any nice arrangement of fruit or flowers may be used. If high, a tall vase with a few delicate sprays of flowers is appropriate.

4. Arrange the "covers" opposite each other, at equal distance.

5. The place, napkin, and all pieces of silver should be the same distance from the table edge, about one inch.

6. Not more than five or six pieces of silver are put on the table at each cover. Extra pieces are brought in with the course they accompany.

7. The dinner knife and fork mark the cover, with the space between for the plate. The knife is placed to the right with the sharp edge toward the plate, and the fork to the left with the tines up. Spoons go to the right on the outside of the knife, with extra forks to the left beside the dinner fork. These pieces are placed in the order in which they are to be used.

8. The water glass is placed at the point of the knife.

9. The bread and butter plate goes at the tip of the dinner fork.

10. The butter spreader is placed on the bread and butter plate at a convenient angle on the right side, with the sharp edge in.

11. Place the napkin perfectly flat and squarely folded at the left of the forks. The loose edge should be up with the hem parallel to the forks, and the selvage parallel with the table edge. If too crowded for this arrangement, place the napkin on the plate or in the space between the knife and dinner fork.

12. Simple place cards may be laid upon the napkin. Elaborate ones are placed above the "cover."

13. Salt and pepper shakers, relishes, etc., are placed within the line formed by the tumblers.

14. When space allows it, the coffee pot or tea pot is placed to the right of the hostess, with the cups and saucers in front. This makes for convenience in pouring. The cream and sugar, on hostess' left, is passed to the guests.

15. The carving knife, and a big spoon should be on the right side of the carving cloth with the sharp edge in. The fork, tines up, should be on the left, together with the sharpener.

16. The extra silver, china, glassware, water, bread and butter should all be kept on the serving table. The serving tray should always have a doily or napkin laid over it.

17. Dishes for hot food should be hot and those for cold food should be chilled.

18. In seating the guests, the hostess sits near the kitchen if she does her own serving. The host sits opposite with the lady guest of honor on his right. A gentlemen honor guest sits at the right of the hostess.

Simple Meals Most Satisfactory

THE eternal question of "What'll We Eat?" becomes even more pressing along about the holiday season.

And this is only natural. For from times immemorial, in all races and all stages of civilization, man has celebrated big occasions by means of a feast.

But in her desire to give the family everything they could want, the Mother in the home should guard against overfeeding. She should not lose sight of the fact that her loved ones will really be happier with less food and a sweet and smiling "Mama," than with everything imaginable to eat and Mother all tired out from overwork. Too much to eat is apt to affect the sweet dispositions of the "eaters" as well.

One Dessert Per Meal Enough

How many have seen a dinner table loaded down with cake, rich pies, doughnuts, fruit, nuts and preserves all at the same time, and this on top of a heavy meal? The writer has seen just such cases, and finds that they are all too common among farmer's wives, especially at this season of the year. It ought to be a "misdemeanor" to have more than one kind of dessert at any one meal, except on a few special occasions.

A meat or meat substitute, potatoes, one or two other vegetables (or a vegetable and a salad) bread and butter, a possible relish, and some one dessert should be enough for any family.

Greater Variety Possible

With fewer foods of the same type at one meal, it is easier to have variety in the week's menus, and foods will not have to be repeated in the diet so often. It is easier to prepare and serve an attractive and appealing meal under this system, as the housewife has more time for appearance and arrangement. It is less work for the cook, who is already "swamped" with other duties on the farm. Then too a crowded table simply can't be made to look pretty.

Delicious Prune Desserts

Try These on Your Family

DID you expect Ye Editor to give a set of plum pudding, cake, cookies, and candy recipes for Christmas? Well, that is not the case. She is going to make you a present of something more useful, something that will be useful for months and years to come. They are recipes for simple, yet extraordinarily good desserts—prune desserts!

There are two kinds of prunes, the Oregon, or tart sweet prune and the California or sweet prune. It isn't so much the kind of prune that counts as the method of preparation. They should be washed, then covered with warm water and soaked several hours, over night if possible. Then heat them slowly to the simmering point and cook under boiling point until tender. Rapid cooking destroys both the flavor and appearance of the fruit. Be sure and have sufficient water to cover. Slow cooking develops the natural fruit sugars so that little if any sugar is needed.

These recipes were selected from a large group as being delicious and practical. They have all been tested.

Prune Ice Cream

1 cup prune pulp 2 cups milk
1 cup sugar 2 cups cream
1 cup lemon juice
Mix and freeze as for any other ice cream.

Prune Gelatin Cream

1 cup prune pulp 1½ tablespoons gelatin dissolved in ¼ cup cold water and melted
1 cup sugar
1 cup milk
1 cup cream
Allow to set and serve with whipped cream.

Prune Whip

1 large prunes 1 teaspoon lemon juice
1 cup sugar
1 cup white

Soak the prunes 24 hours. Simmer until tender. Remove pits and seeds. Beat egg white stiff, add sugar. Then fold in prune pulp and lemon juice.

Another method is to cook the sugar with a little water till it threads and then pour on stiffly beaten white

Another thing, it costs less to feed a family and feed them well under this plan, as there is less waste from left overs and from overeating.

Families following the simpler regime have better digestions, and are correspondingly happier, due to more temperate eating and the resulting better balanced meals. Children of families on the many-dessert plan, soon learn to slight everything for desserts, and thus ruin their health through improper diet.

Plea for Saner Eating

The purpose of this article is not to ban all extra "goodies" for Christmas, but is an earnest plea for saner eating as a regular thing, and less of the "We'll-eat-till-we-die" spirit.

The Housewife's Tool Kit

A small tool box containing the ordinary tools, kept in the kitchen and used when the need arises to replace a hook, cut a wire, or drive a nail, saves more time in the course of even one week than almost any other household convenience. Try it and see, is their advice.

Start "Hands Off" Policy

Other members of the family must be given to understand that this box belongs to the housekeeper, and that the tools it contains can be used only with her permission, and then returned promptly or not borrowed at all.

The exact contents of the tool kit will vary with the individual home. The main idea is to have them handy when needed.

A suggested list for the housewife's repair kit includes a hammer, pair of pliers, scissors, jack knife, mending tape, tape line, screws, tacks, string, glue, oil can, hooks, screw eyes, labels, and thumb tacks. Any other useful articles may be added for the convenience of the worker.



No Excuse Now For dingy film on teeth

A way has been found to combat film on teeth, and millions of people now use it.

A few years ago, nearly all teeth were coated more or less. Today those dingy coats are inexcusable. You can prove this by a pleasant ten-day test.

Film ruins teeth

Film is that viscous coat you feel. It clings to teeth, gets between the teeth and stays. Then it forms the basis of dingy coats which hide the teeth's natural luster.

Film also holds food substance which ferments and forms acid. It holds the acid in contact with the teeth to cause decay. Millions of germs breed in it. They, with tartar, are the chief cause of pyorrhea.

Thus most tooth troubles are now traced to film. No ordinary tooth paste effectively combats it. So, despite all care, tooth troubles have been constantly increasing, and glistening teeth were rare.

New methods now

Dental science has now found two effective film combatants. Their action is to curdle film and then harmlessly remove it. Years of careful tests have amply proved their efficiency.

A new-type tooth paste has been created, based on modern research. These two film combatants are embodied in it for daily application. The name of that tooth paste is Pepsodent.

Dental authorities the world over now endorse this method. Leading dentists everywhere are urging its adoption.

Other new effects

Pepsodent also multiplies the starch digestant in the saliva. That is there to digest starch deposits which may otherwise cling and form acids.

It multiplies the alkalinity of the saliva. That is there to neutralize acids which cause tooth decay.

Old-time tooth pastes, based on soap and chalk, had just opposite effects.

It polishes the teeth, so film adheres less easily.

Thus Pepsodent does, in five great ways, what never before was so successfully done.

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Now careful people of fifty nations are using Pepsodent, largely by dental advice. You can see the results in lustrous teeth wherever you look today. To millions of people it has brought a new era in teeth cleaning.

Send the coupon for a 10-Day Tube. Note how clean the teeth feel after using. Mark the absence of the viscous film. See how teeth whiten as the film-coats disappear.

In one week you will realize that this method means new beauty, new protection for the teeth. Cut out the coupon now.

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2970. A Set of Pleasing Toys for the Nursery.

Here is a comfortable roly poly doll and a cunning cat. Toweling stuffed with cork would make these models floating toys. Flannel, felt, flannel, cutting flannel, velvet, drill and crash could also be used. The doll could be made of different material below the arms.

The Pattern is cut in one size. Either style requires 1/4 yard of 27-inch material.

Pattern mailed to any address on receipt of 10c in silver or stamps.

4187-4049 A Very Pleasing Afternoon or Dinner Dress With the New "Side Drape"

Satin crepe with embroidery for decoration would be attractive for this style. Canton crepe or velvet is also nice.

The Blouse 4167 is cut in 7 Sizes: 36, 38, 40, 42, 44, 46, and 48 inches bust measure. The Skirt 4049 is cut in 7 Sizes: 25, 27, 29, 31, 33, 35 and 37 inches waist measure. The width at the foot is 2 1/2 yards. To make the dress for a medium size will require 6 1/4 yards of one material 40 inches wide.

Two separate patterns mailed to any address on receipt of 10c FOR EACH pattern in silver or stamps.

4177. A Popular Model

Coat dress styles have been "rediscovered"—and are shown this season, in many attractive versions. The design here portrayed has very simple lines, and is easy to develop. It is good for velveteen, kasha, broadcloth or velvet.

The Pattern is cut in 7 Sizes: 34, 36, 38, 40, 42, 44 and 46 inches bust measure. A 38-inch size requires 5 1/2 yards of 40-inch material. The width at the foot is 2 1/2 yards.

Pattern mailed to any address on receipt of 10c in silver or stamps.

4179. An Ideal House Dress.

The simplicity of this model is its best feature. The pleasing fulness above the bust, and an equally comfortable allowance on the sides at the hips, are practical points that will appeal to the woman who likes neatness and comfort in her housedresses. The sleeve in short length is attractive and com-

fortable. The long sleeve may be turned up for convenience in working.

This Pattern is cut in 6 Sizes: 34, 36, 38, 40, 42, and 44 inches bust measure. A 38-inch size requires 4 1/2 yards of 32-inch material. The width at the foot is 2 1/2 yards.

Pattern mailed to any address on receipt of 10c in silver or stamps.

4187. An Up-To-Date Dress for the Growing Girl.

This makes a splendid school dress in serge with contrasting material, or in checked or plaid woolen with trimming of braid or a finish of machine stitching. The waist has the now so popular side closing. The sleeve may be finished in wrist or elbow length.

The pattern is cut in 4 sizes: 6, 8, 10, and 12 years. A 10 year size requires 2 1/2 yards of 44-inch material.

Pattern mailed to any address on receipt of 10c in silver or stamps.

4202. A Becoming Style for the Growing Girl.

Broad-cloth in a new shade of brown with bands of satin would be attractive for this design. It is nice also for serge, and kasha cloth.

The Pattern is cut in 3 Sizes: 12, 14, and 16 years. A 14 year size requires 2 1/2 yards of 54-inch material. The closing is under the panel at the left side.

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Fall Spraying Pays

WITH his peach and pear trees all sprayed before spring work bears down heavily, the far-sighted orchardist who did all possible spraying in the fall can chuckle to himself while his less provident neighbor is trying to do a dozen things at once to catch up, says A. Freeman Mason, extension specialist in horticulture at the New Jersey Experiment Station.

Peach Leaf Curl can be controlled by a fall dormant spray with wholly satisfactory results, while the Pear Psylla infestation can be materially reduced at this time, thus cutting down on disagreeable tasks that pile up in March.

Great damage is done in many sections of New Jersey by the peach leaf curl. It attacks the newly forming leaves in the early spring, making them enlarged, wrinkled and blistered, with a whitish surface. These leaves later drop off, the entire tree occasionally being defoliated, thus reducing the size and quality of the crop and injuring the set of buds for the following year. Spraying during the dormant season with concentrated lime-sulfur, diluted 1 part to 15 parts of water (provided no scale is present), or 4-4-50 Bordeaux mixture, paying special attention to coating the twigs, will control the disease effectively. If scale is present, use only commercial concentrated lime-sulfur diluted 1 part to 9 parts of water. Oil sprays are not entirely effective in controlling peach leaf curl.

The pear psylla are enjoying these last few bright warm days before hibernating under the bud scales and bark on the pear trees. They sun themselves on the twigs, but because of the cold they are too sluggish to move, and make a ready target for an oil spray at that time. Reduction of the adults now cuts down the spring infestation effectively. Bright still days should be taken advantage of to combat this pest which is driving many pear growers out of business every year. This dormant treatment, supplemented by lime-sulfur sprays in the summer, will keep the insect well under control.—N. J. Co-op. Extension Service.

Czechoslovakian Cherries Capture the Continent

CHERRIES from Czechoslovakia are becoming common and well-known all over western Europe. In one month during the summer over 40 carloads have been shipped out of that country, according to American Consul C. S. Winans, Prague, in a report to the Department of Commerce. The greater part of the exports that month went to England and Holland.

Fall Spraying

PLEASE advise me if you advise fall spraying for the control of San Jose scale. My trees are very badly infested with San Jose scale and I want to get rid of it. Would you use Scalecide in the fall?—A. B. A., Missouri.

IN VERY bad infestations of scale, it is sometimes advisable to spray in the late fall and then again in early spring, before the growth starts. With this double application, you can usually get the trees cleaned up in good shape. Scalecide is very easy to apply as it is an oil spray and very penetrating, and is efficient for fall or spring dormant sprays.—Paul Stark.

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"ALL My 250 Stark Trees Planted in 1920 Bore 20 to 80 Big Apples Each in 1922!"

THE big photo below shows Mr. Chas. Riedenbaker of Burlington Co., NEW JERSEY, and one of those 250 Stark's Golden Delicious trees planted in 1920.

This man bought several acres of poor stump land that wasn't "worth a nickel an acre," so everyone said. Planted to Stark Trees it is yielding him riches, has helped him raise his big family in comfort and fatten his bank account year by year.

Speaking of his Stark's Golden Delicious, he declares: "The trees are very hardy and rapid

growers. I never knew of any other apple that bore so young and had such heavy crops. It is the best apple grown—very large, fine color, exquisite flavor."

Regarding this same variety, Stark's Golden Delicious, A. B. Anthony, the noted fruit grower of Whiteside Co., ILLINOIS, declares:

"The quality of the Stark's Golden Delicious apple, together with its longer keeping ability, its clinging tenacity and its heavy bearing qualities, is such that Stark's Golden Delicious trees should be planted in numbers equal to all other kinds of apple trees PUT TOGETHER!"

The Apple That Defies Frost and Freezes

The ability of Stark's Golden Delicious Trees to set fruit in spite of frosts and freezes amazes state horticulturists and orchardists. This variety puts forth three different blooms. First—the ordinary fruit-spur buds bloom. Next—the lateral bloom-buds. And then—the terminal bloom-buds. Two sets of blooms may get frosted—and

still the third one can produce an abundance for fruit. No other apple does this!

S. Hahn, Montgomery Co., KANSAS, writes: "My 300 Stark's Golden Delicious trees beat anything in my 50-acre orchard! I call them 'ever-bearers' because they bloom 3 times in the spring. They are frostproof!"

"My Stark's Golden Delicious

trees bore fruit though we had 3 freezes when it was in bloom. When I told people here that I had fruit they would not believe it. It is THE frostproof of all apple varieties! Also very fast grower and WILL NOT BLIGHT!" Wm. E. Hellig, Lycoming Co., PENN. This great apple averages 50 per cent larger than Grimes Golden—and keeps 4 mos. longer. So—beyond all doubt, it is now fair and just to declare—



Stark's Golden Delicious

Apple Average Size

Stark's Golden Delicious

The tree below is one of 250 Stark's Golden Delicious trees planted in 1920 in Chas. Riedenbaker's orchard, Burlington Co., N. J. All bore big crops in 1922!

"The Wealth-Maker for America's New Fruit Grower Kings!"

Reports from practically every State indicate this to be a FACT. E. N. Ricks, Wayne Co., N. CAROLINA, writes: "I don't know what it is about your trees that makes them grow and bear so well, but they have got anything beat that I ever saw in the way of fruit trees—and I have been in over 30 different States! My Stark's Golden Delicious

planted in 1920 had fine apples on them this year (1922)." And Prof. Otis Crane, Grant Co., INDIANA, asserts: "I have worked for the Agricultural Extension Dept. of Indiana for years and can say that Stark's Golden Delicious are the most vigorous growers and bear apples younger than any other I ever observed or planted. Investigate this 'Queen of all Yellow Apples.'"

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"Both Stark's Golden Delicious and Stark Delicious are free from all tree diseases and cankers."—E. RAY, No. Adams, Mass.



Stark Delicious

BEAR MONEY CROPS IN 44 OUT OF 48 STATES. The ORIGINAL TREE Strain of STARK DELICIOUS apple trees has achieved a record for size, heavy-bearing and big money crops never before equaled by any other red apple tree. Get the PROOF! Send COUPON for BIG "PRIZE-FRUIT" BOOK—at once!

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For Over 107 Years



2 BIG BOOKS and 5 Seeds FREE

THIS TREE PLANTED IN 1920 BORE 80 APPLES IN 1922

All apples do not show in this photo. Other side of tree also loaded.

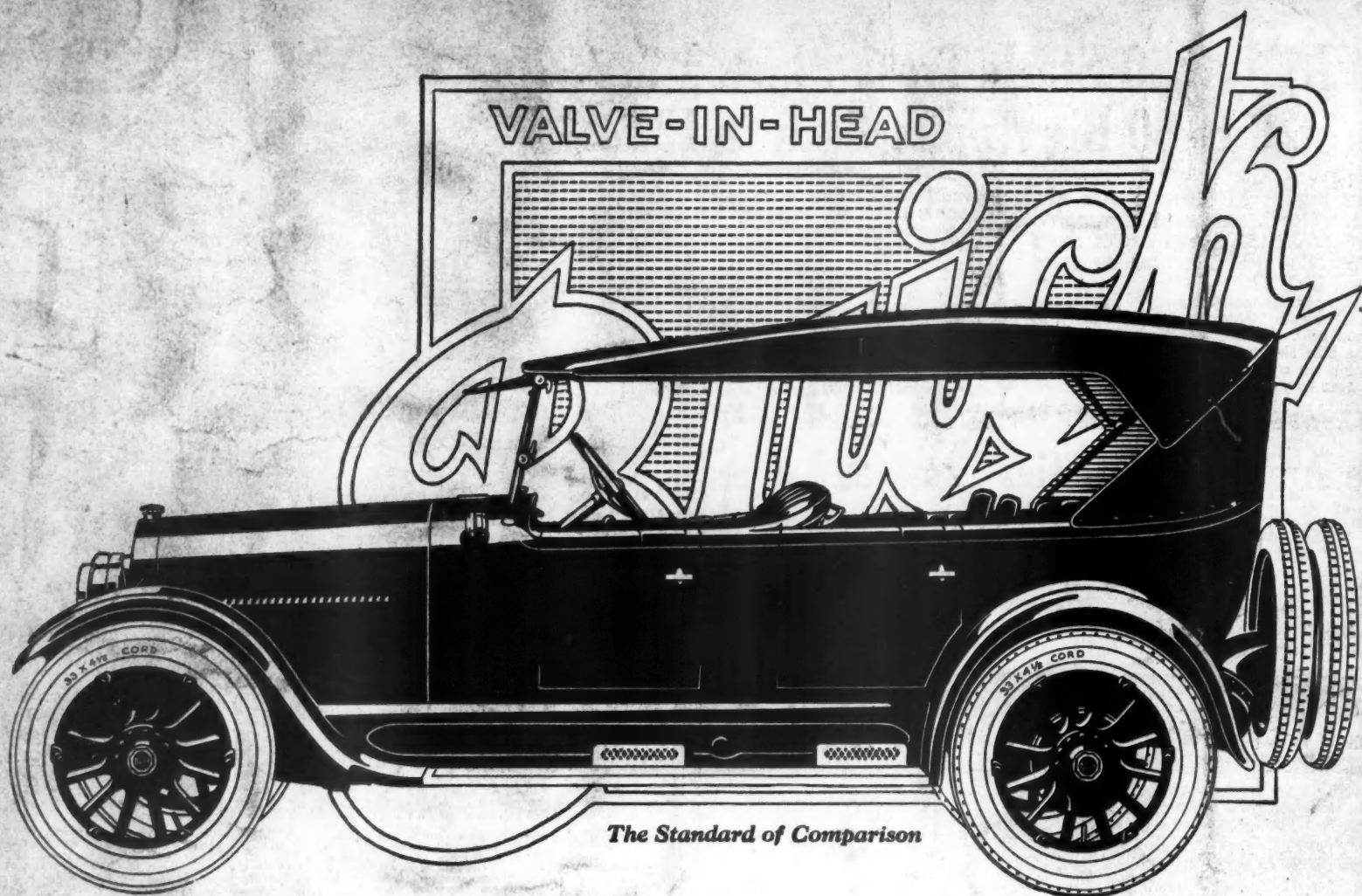
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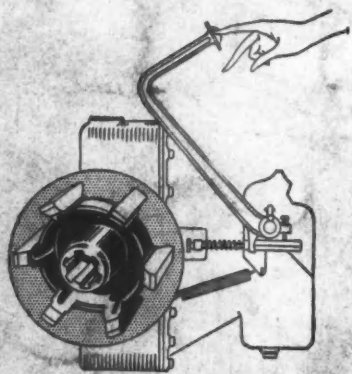
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